Supreme Court, U.S.
FILED

04 14 85 MAY 9 - 2005

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No.

IN THE

Supreme Court of the United States

WHITE-RODGERS,
A DIVISION OF EMERSON ELECTRIC COMPANY,
Petitioner,

v.

FRED D. BITLER, ET AL.,
Respondents.

On Petition For A Writ Of Certiorari To The United States Court of Appeals For The Tenth Circuit

PETITION FOR A WRIT OF CERTIORARI

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QUESTIONS PRESENTED

In this product liability case, the Tenth Circuit held that plaintiffs' experts were properly allowed to testify under *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), even though the experts failed to perform readily-available tests or otherwise connect their conclusions to the facts of this case. The questions presented are:

1. In performing its gatekeeping duty under *Daubert*, may a court consider an expert's conclusions, or must the court focus solely on the expert's methodology?

2. Does *Daubert*'s "fit" requirement demand a heightened level of relevance, or is it satisfied by meeting the general relevance requirement of Federal Rule of Evidence 401?

3. Where an expert's theory can be readily verified through testing, and where none of the other *Daubert* guideposts establish the theory's reliability, does a district court abuse its discretion by permitting the expert to present his untested theory to the jury?

PARTIES TO THE PROCEEDINGS AND RULE 29.6 STATEMENT

The following individuals and entities were parties to the proceeding below:

Fred D. Bitler, Peggy A. Bitler, Colorado Compensation Insurance Authority, and White-Rodgers.

White-Rodgers is an unincorporated division of Emerson Electric Co. Emerson Electric Co. has no parent corporation, and no publicly held company owns ten percent or more of its stock.

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PETITION FOR A WRIT OF CERTIORARI

Petitioner White-Rodgers respectfully petitions this Court for a writ of certiorari to review the judgment of the United States Court of Appeals for the Tenth Circuit in this case.

OPINIONS AND ORDERS BELOW

The opinion of the court of appeals (Pet. App. 1a-27a), as amended on panel rehearing, is reported at 400 F.3d 1227. The original opinion, now withdrawn, was reported at 391 F.3d 1114. The order of the district court denying White-Rodgers's *Daubert* challenges (Pet. App. 28a-58a) is not reported.

JURISDICTION

The Tenth Circuit issued its original opinion on December 6, 2004. On February 9, 2005, the court issued an amended opinion upon panel rehearing and concurrently denied rehearing en banc. This Court has jurisdiction pursuant to 28 U.S.C. § 1254(1).

RULES INVOLVED IN THIS CASE

Federal Rule of Evidence 401 provides: "'Relevant evidence' means evidence having any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence."

Federal Rule of Evidence 702 provides: "If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case."

STATEMENT OF THE CASE

This is a classic case of "junk science," in which the district court permitted plaintiffs to base their claims on bogus, untested, and speculative expert testimony that should never have reached the jury. These experts theorized that a gas control manufactured by White-Rodgers malfunctioned and caused the propane gas explosion that injured plaintiff, even though the gas control worked perfectly when tested after the accident. White-Rodgers argued at trial and on appeal that these experts' opinions were inadmissible under *Daubert*, but the district court allowed them to testify and the Tenth Circuit affirmed, upholding a multimillion-dollar damage award.

The court of appeals' decision misapplies *Daubert*, relaxes the rigorous gatekeeping requirements established by this Court, and worsens an existing circuit split.

Plenary review is warranted to resolve the conflict in the circuits over whether a court may evaluate an expert's *conclusions* in assessing relevance and reliability, or only his *methodology*, as the Tenth Circuit did here. Review is further warranted to dispel the confusion in the lower courts over the proper application of *Daubert*'s requirement that an expert's opinion "fit" the facts of the particular case. Whereas most courts have interpreted the "fit" requirement as mandating a heightened standard of relevance, the Tenth Circuit in this case simply applied the basic relevance standard contained in Federal Rule of Evidence 401. Finally, this Court's guidance is necessary to make clear that a district court's discretion in applying *Daubert* is not unlimited and that where, as here, the expert's untested opinion fails to satisfy a single one of *Daubert*'s four tests for reliability, admission of that testimony is an abuse of discretion.

In product liability cases, juries are often charged with choosing between conflicting expert opinions in highly complex and technical areas. Because "expert witnesses have the potential to be both powerful and quite misleading," *Cooper v. Smith & Nephew, Inc.*, 259 F.3d 194, 199 (4th Cir. 2001) (internal quotation marks omitted), strict application of

Daubert's threshold reliability standards is essential. "While meticulous *Daubert* inquiries may bring judges under criticism for donning white coats and making determinations that are outside their field of expertise, the Supreme Court has obviously deemed this less objectionable than dumping a barrage of questionable scientific evidence on a jury, who would likely be even less equipped than the judge to make reliability and relevance determinations and more likely than the judge to be awestruck by the expert's mystique." *Allison v. McGhan Med. Corp.*, 184 F.3d 1300, 1310 (11th Cir. 1999).

Particularly where, as here, the jury is confronted with claims brought by a severely injured individual against a large corporation, the risks are magnified that the jury may be influenced by sympathy, emotion or bias, and find it even more difficult to make an objective evaluation of an expert's opinion. In such circumstances, the district court's role as gatekeeper is crucial to ensuring that the expert testimony that reaches the jury is both relevant and reliable. Here, however, the district court and the Tenth Circuit largely abdicated the gatekeeping role, resulting in a multimillion-dollar verdict based on flawed and misleading "science."

1. On the evening of July 25, 1996, plaintiff Fred Bitler was severely injured in a propane gas explosion in the basement of his home. Pet. App. 3a.

A few days after the accident, an investigator for the property owner's insurer inspected the site of the explosion and tested the propane lines throughout the house. His testing revealed a leak in the basement at a T-connector in the copper line that supplied propane to a water heater. The investigator removed the water heater from the scene without further testing by unhooking the copper piping at its connection to the water heater. Pet. App. 35a.

White-Rodgers manufactured the propane gas control used in the water heater. The control, which regulates the flow of propane into the water heater, contains a safety valve that shuts off all propane to the pilot light and the main

burner if the pilot is extinguished. When the pilot is lit, the flame heats a thermocouple, creating an electric current that energizes an electromagnet that holds the safety valve open against the force of a spring and allows propane to flow to the pilot. If the pilot light goes out, however, the thermocouple is no longer heated and stops producing a current to energize the electromagnet, allowing the spring to snap the valve shut. The safety valve seat is made of rubber, which forms a seal against a circular metal surface when shut and blocks propane from flowing through to the pilot. Pet. App. 4a.

An early White-Rodgers design of the gas control proved susceptible to leaks in the safety valve. When large particles of copper sulfide occasionally entered the control, they could make their way to the safety valve and become caught between the rubber valve seat and the circular metal surface, thereby preventing the valve from closing fully when the pilot went out. Copper sulfide particles are a common contaminant in gas and propane lines. In 1978, White-Rodgers modified its gas control by installing a steel mesh screen at the inlet of the control to catch the larger particles of copper sulfide and other debris in the gas stream that had been causing the leaks. Pet. App. 4a.

Between 1978 and 1980, White-Rodgers manufactured 200,000 gas controls protected by mesh screens. The gas control in plaintiffs' hot water heater was one of these 200,000. Pet. App. 5a. The screens proved effective in stopping leaks caused by particles of copper sulfide and other debris. None of the other 200,000 controls in use throughout the world has ever been shown to leak due to such particles lodging on the safety valve seat.

In post-accident testing, the safety valve from plaintiffs' water heater worked as designed, snapping shut when it was supposed to, with no leak whatsoever. Pet. App. 5a. A later disassembly of the control revealed that the larger particles had been trapped against the outside of the mesh screen, and none were observed on or near the valve seat. Consistent with the design of the screen, which admits any particle

smaller than the openings in the screen, minuscule copper sulfide particles were observed to have entered the control, and some were found on the valve seat. *Id.* Apart from the assertions of plaintiffs' experts, there is no evidence that any of the tiny particles found inside the control were large enough to have prevented the safety valve from shutting properly when the pilot light extinguished.

2. In 1998, plaintiffs brought negligence and strict product liability claims in Colorado state court against White-Rodgers, A.O. Smith Corporation (the manufacturer of the water heater), and National Propane Corporation (the company that sold, installed, and serviced plaintiffs' water heating system and propane piping). Pet. App. 6a, 37a. After removing the case to federal district court on diversity grounds, defendants moved for summary judgment, challenging the admissibility of plaintiffs' proffered expert testimony on causation—an essential element to all of plaintiffs' claims. *Id.* at 6a, 37a, 38a.

Plaintiffs' lead expert on causation was Donald Sommer, an aviation engineer who had little or no experience with propane systems. His theory was that the White-Rodgers gas control leaked when copper sulfide particles passed through or around the mesh screen positioned at the inlet and, combining with grease on the seat of the safety valve, prevented the valve from shutting fully when the pilot light went out. Pet. App. 47a. Another expert, W. Alan Bullerdiek, gave a similar opinion. In arguing that Sommer's and Bullerdiek's opinions were irrelevant and unreliable, White-Rodgers pointed out that they had failed to validate their theory by testing whether such a small quantity of tiny particles, stuck to grease on the valve seat, was capable of causing the leak that led to this explosion.

The district court denied the challenge under *Daubert* and Rule 702.[1] The court reasoned that Sommer's theory

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[1] The district court's order was entered on March 3, 2000 and applied the then-current version of Rule 702, which was later amended effective

was not "novel" because *large* copper sulfide particles had been known to build up in other gas controls that did *not* contain mesh screens, thus preventing safety valves from closing fully. Pet. App. 50a. It explained that because Sommer used general "principles of physics" to explain how copper sulfide particles could move through a gas line, he did not need to test his conclusion that the particles on the valve seat in this particular case were of sufficient size to have caused a leak. *Id.* at 52a. The court found that Sommer's failure to test his theory did not bar its admissibility, commenting that defendants "place too much emphasis on a mechanical application of the *Daubert* factors." *Id.* at 48a. The court concluded that any shortcomings in Sommer's theory—such as his unsupported assumption that a combination of tiny particles and grease on the safety valve seat caused a leak—went to the weight of his testimony, rather than its admissibility. *Id.* at 55a.

The court also rejected White-Rodgers's *Daubert* challenge to plaintiffs' expert Elden Boh. The court found that Boh had "employed a sound methodology" based on his personal experience as a fire investigator in concluding that the most likely source of the propane that had caused the explosion was the gas control, rather than the leak he found at the T-connector in the basement. Pet. App. 44a. The court held that Boh's inability to determine how the gas control supposedly had leaked was irrelevant because he was only provid-

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[Footnote continued from previous page]

December 1, 2000. The pre-amendment version provided: "If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise." The Tenth Circuit did not specify which version of Rule 702 it was applying, but because the 2000 amendments to Rule 702 do "not alter the standard for evaluating the admissibility of experts' opinions as articulated" in *Daubert* and its progeny, the admissibility standards under new Rule 702 and its pre-amendment counterpart are the same. *Cooper*, 259 F.3d at 199 n.1.

ing a portion of the plaintiffs' evidence on causation and other experts could testify to the gas control's specific failure. *Id.* at 44a-45a. Finally, the court rejected White-Rodgers's other challenges because they "merely challenge[d] Boh's conclusions," which the court held were not relevant to determining the admissibility of expert testimony under *Daubert*. *Id.* at 45a.

3. At trial, Sommer and Boh explained that in reaching their conclusions in this product liability case, they had employed a "differential diagnosis" technique used by medical experts to pinpoint the cause of the explosion, by eliminating other potential causes until they were left with only one possibility. Pet. App. 15a-16a. For example, when asked whether the source of the propane leak could have been the T-connector—which, unlike the safety valve, was actually shown to have been leaking—Sommer testified that he excluded the T-connector as a potential cause because he "couldn't come up with an answer" for how it would have started leaking prior to the explosion. Reporter's Transcript 190. Thus, Sommer concluded that the T-connector was *not* the cause, even though post-accident testing showed it was leaking, and concluded that the safety valve *was* the cause, even though post-accident testing showed the safety valve was not leaking.

Sommer did not dispute that post-accident testing showed that the safety valve worked perfectly. However, he opined that copper sulfide contamination "leads to intermittent leaks," rendering the post-accident testing inconclusive in his view. Pet. App. 5a. Although Sommer easily could have tested his theory simply by actuating the valve repeatedly and checking each time for a leak, Sommer and plaintiffs' other experts opted not to test the safety valve themselves to establish whether this "intermittent"-leak hypothesis was defensible.

The jury rendered a verdict in plaintiffs' favor on their negligence and strict liability claims, awarding $2,319,429.27 in damages. The jury attributed fifty percent of the fault to

National Propane, forty percent to White-Rodgers, and ten percent to plaintiffs. Pet. App. 6a.

4. The Tenth Circuit affirmed, holding that plaintiffs' expert testimony was both relevant and reliable.[2] The court acknowledged the existence of *Daubert*'s four reliability factors—"(1) whether a theory has been or can be tested or falsified; (2) whether the theory or technique has been subject to peer review and publication, (3) whether there are known or potential rates of error with regard to specific techniques, and (4) whether the theory or approach has 'general acceptance,'" 509 U.S. at 593-94—but held that "these factors are most relevant in the context of a new and novel scientific theory." Pet. App. 9a. Thus, the "[f]ailure to consider one, or even any, of these factors . . . will not be dispositive of a district court's failure to fulfill its gatekeeping role." *Id.*

The court held that in determining reliability under *Daubert*, "a trial court's focus generally should not be upon the precise conclusions reached by the expert, but on the methodology employed in reaching those conclusions." Pet. App. 9a.

With regard to *Daubert*'s relevance requirement, the court explained that "[r]elevant evidence 'means evidence having any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence.'" Pet. App. 10a (quoting Fed. R. Evid. 401). Consequently, in applying *Daubert*'s requirement that there be a "fit" between the expert's opinion and the facts of the particular case, "[a] trial court must look at the logical relationship between the evidence proffered and the material issue that evidence is

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[2] The Tenth Circuit's original opinion issued on December 6, 2004. White-Rodgers petitioned for rehearing en banc, contending that the panel had misapplied *Daubert*. On February 9, 2005, the panel *sua sponte* granted rehearing, withdrew its opinion, and issued a new opinion "for the purpose of clarifying our language." Pet. App. 60a. In the same order, the court noted that en banc rehearing had been denied. The following discussion addresses the new panel opinion.

supposed to support to determine if it advances the purpose of aiding the trier of fact." *Id.*

Applying these standards, the court held that plaintiffs' expert testimony was properly admitted. With regard to Boh, the court approved the district court's determination that "Boh's methodology in reaching his conclusion about the cause of the explosion was sound." Pet. App. 12a.

With regard to Sommer, the Tenth Circuit acknowledged his failure to test his theory, but reasoned that the *Daubert* Court's citation to Karl Popper, *see Daubert*, 509 U.S. at 593, indicated that the testing factor "is aimed at theories purporting to explain the causal relations among regularly occurring natural phenomena," such as "Ptolemy's theory of the movement of celestial bodies which hypothesized that the Earth was the center of the solar system." Pet. App. 13a. Thus, "[w]hen an expert proposes a theory that modifies otherwise well-established knowledge about regularly occurring phenomenon, such as the normal ignition temperature of wood, we would expect the importance of testing as a factor in determining reliability to be at its highest." *Id.*

The court concluded that because Sommer did not challenge "well-established knowledge," such as the orbits of planets or the ignition temperature of wood, he did not need to test whether the tiny copper sulfide particles found on the valve seat were actually capable of holding the safety valve open in this particular case. *See* Pet. App. 13a ("[P]laintiffs' experts propose a theory about how the accident occurred given the known science of copper sulfide particulate contamination as a cause of propane gas leaks."). The court explained that "[w]hether the Bitlers established that the copper sulfide particles and grease found on the valve seat caused *this* accident is a matter the district court determined goes to the sufficiency of the evidence—not its scientific reliability." *Id.* at 14a (emphasis added). "The core science—that copper sulfide particles are the kind of thing that when lodged on the valve seat can cause leaks—is sufficiently well-established

that the district court did not abuse its discretion in finding it reliable." *Id.*

The court also held that Sommer's testimony satisfied *Daubert*'s "fit" requirement "because it involves a reliable method that would aid the jury in resolving a factual dispute." Pet. App. 19a. The court acknowledged White-Rodgers's objections that Sommer had failed to "fit" his opinions to the actual facts of this case, but stated that "[t]his argument confuses a *Daubert* inquiry into relevant 'fit' with the jury question of which theory, plaintiffs' or defendant's, best captures the truth of the matter at issue." *Id.*

Finally, the court noted that the experts' "differential diagnosis" approach is ordinarily used in medical cases and admitted that it "is not so clear . . . whether 'differential diagnosis' is an appropriate method when employed outside of the medical context," such as in a product liability case. Pet. App. 16a-17a. But the court concluded that "especially in light of our deferential standard of review," the district court did not err in admitting the testimony. *Id.* at 18a.

REASONS FOR GRANTING THE WRIT

This Court should grant review to resolve the circuit split over whether *Daubert* permits courts to assess an expert's conclusions—not just his methodology—in evaluating reliability. Review is also warranted to determine whether *Daubert*'s "fit" requirement is a mere Rule 401 relevance standard, or whether it is a heightened requirement that demands close scrutiny of the connection between the expert's opinion and the facts of the case. Finally, review is warranted to clarify the circumstances in which an expert must validate his theory through testing. As shown below, the circuits have interpreted *Daubert* in strikingly different ways, with some courts rigorously exercising their gatekeeping duties, and others, such as the court below, adopting a more liberal "let it all in" approach.

The Tenth Circuit misapplied *Daubert* and adopted an overly relaxed and deferential approach to the gatekeeping

requirement. Sommer's theory was that the minuscule particles found on the valve prevented it from closing and caused the explosion. But there is absolutely no scientific basis for this conclusion. Although it is well documented that *large* particles on the valve seat can cause a leak, it was completely novel to propose that grease plus the *tiny* particles present in this case could have caused a leak. Sommer's theory is akin to concluding that because a large boulder, bounding down a hillside, may be capable of crushing a passing car, a small pebble could do so as well.

At trial and on appeal, White-Rodgers pointed out that Sommer's theory could not be reconciled with the basic facts of this case, namely that (1) there was no evidence that any particles large enough to cause a leak had bypassed the mesh screen and reached the valve seat, (2) there was no evidence that the tiny copper sulfide particles that did reach the valve seat were actually capable of preventing the valve from sealing properly, and (3) the safety valve functioned properly when tested after the accident. Despite the obvious disconnects between Sommer's explanation and the facts of this case, the Tenth Circuit held that these sorts of gaps were irrelevant to the *Daubert* analysis and were questions for the jury.

The Tenth Circuit's decision conflicts with decisions from other circuits and cannot be reconciled with this Court's precedent. As this Court recognized in *Daubert*, because Rule 702 allows the presentation of "scientific, technical, or other specialized *knowledge*," an expert's opinion must be "more than subjective belief or unsupported speculation." 509 U.S. at 589-90. As a result, "[s]ince *Daubert*, . . . parties relying on expert evidence have had notice of the exacting standards of reliability such evidence must meet." *Weisgram v. Marley Co.*, 528 U.S. 440, 455 (2000). The Tenth Circuit's approach renders these "exacting standards of reliability" a virtual nullity and opens the gate to the admission of rank speculation masquerading as science.

I. THIS COURT SHOULD RESOLVE THE CONFLICT OVER WHETHER *DAUBERT* PERMITS CONSIDERATION OF AN EXPERT'S CONCLUSION.

The Tenth Circuit held that in determining reliability under *Daubert*, "a trial court's focus generally should not be upon the precise conclusions reached by the expert, but on the methodology employed in reaching those conclusions." Pet. App. 9a. Although the court seemingly recognized that "it is not always a straightforward exercise to disaggregate method and conclusion," *id.*, the court's analysis focused on the experts' methodology in assessing reliability, dismissing the fact that their conclusions were unsupported by testing or the evidence. Thus, in the Tenth Circuit's view, because "copper sulfide particles are the kind of thing that when lodged on the valve seat can cause leaks," the experts' general *methodology* was reliable and justified their testimony, even though the experts' *conclusion*—that microscopic particles combined with grease to hold open the safety valve and cause a leak in this particular case—was pure speculation. *Id.* at 14a. The court explained that challenges to the experts' conclusions were not relevant to the *Daubert* inquiry, but were properly left to the jury to decide. *Id.* at 19a (stating that White-Rodgers had "confuse[d] a *Daubert* inquiry . . . with the jury question of which theory, plaintiffs' or defendant's, best captures the truth of the matter at issue").

The federal courts of appeals have divided over the question of whether a district court may consider an expert's ultimate conclusion, as well as his methodology, in conducting the reliability analysis. Commentators have explicitly recognized the existence of the split. *See, e.g.*, Theresa M. Moore, Note, *Closing the Doors on Unsupported Speculation: Joiner's Effect on the Admissibility of Expert Testimony*, 33 Ind. L. Rev. 349, 355 (1999) (explaining that "a circuit court split developed" after *Daubert* on the issue of "whether a district court could exclude expert testimony that was based upon reliable methodology merely because the court did not

agree with the reliability of the expert's conclusion"); Ruth Saunders, Note, *The Circuit Courts' Application of* Daubert v. Merrell Dow Pharmaceuticals, Inc., 46 Drake L. Rev. 407, 422-23 (1997) (noting the "significant split among the circuits" on the question of whether a trial judge must "focus[] on the methodology used by the expert witness rather than the conclusions drawn by the expert").

Part of the confusion stems from arguably conflicting language in *Daubert* and *General Electric Co. v. Joiner*, 522 U.S. 136 (1997). In *Daubert*, this Court remarked that the "focus" of a trial court's Rule 702 inquiry "must be solely on principles and methodology, not on the conclusions that they generate." 509 U.S. at 595. In *Joiner*, however, the Court stated that "conclusions and methodology are not entirely distinct from one another," and when there is "too great an analytical gap between the data and the opinion proffered," the opinion is properly excluded. 522 U.S. at 146.

The apparent tension between these two statements has resulted in different approaches among the circuits. Some courts, like the Tenth Circuit in this case, continue to adhere to *Daubert*'s mandate to focus solely on methodology, while other courts read *Joiner* as modifying *Daubert* and authorizing consideration of the expert's conclusions.

In addition to the Tenth Circuit, the Second Circuit and Eighth Circuit hold that the gatekeeping inquiry cannot take the expert's conclusions into account. For example, in *Campbell v. Metropolitan Property and Casualty Insurance Co.*, 239 F.3d 179, 186 (2d Cir. 2001), the court applied *Daubert*'s language that a district court must focus "solely on . . . methodology, not on the conclusions that they generate" in holding that gaps or inconsistencies between an expert's reasoning and his conclusion do not affect the testimony's admissibility. Similarly, in *Smith v. BMW North America, Inc.*, 308 F.3d 913, 919 n.9 (8th Cir. 2002), the court rejected a reliability attack premised on the expert's conclusions, holding that "[u]nder *Daubert*, a court should review only the methodology of the expert, not his or her

conclusion." *See also Bonner v. ISP Technologies, Inc.*, 259 F.3d 924, 932 (8th Cir. 2001) (rejecting *Daubert* challenge and holding that "because [the expert's] methodology was scientifically valid," questions about his resulting conclusions were for the jury).

In sharp contrast to this approach is the approach followed by the Third Circuit, which has construed *Joiner* as modifying *Daubert*'s holding and permitting consideration of an expert's conclusion. For example, in *Heller v. Shaw Industries, Inc.*, 167 F.3d 146 (3d Cir. 1999), the court squarely held that district courts must "examine the expert's conclusions in order to determine whether they could reliably follow from the facts known to the expert and the methodology used." *Id.* at 153. Thus, "[w]hile the district court may not reject an expert's conclusion simply because the court finds it wanting, it is surely within the court's province to ensure that the conclusion, particularly a medical expert's ultimate conclusion on causation, 'fits' with the data alleged to support it." *Id.* at 158. *See also In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 746 (3d Cir. 1994) ("a challenge to 'fit' is very close to a challenge to the expert's ultimate conclusion about the particular case, and yet it is part of the judge's admissibility calculus under *Daubert*").

Like the Third Circuit, at least two other circuits have recognized that district courts can evaluate an expert's conclusion before determining whether the testimony is sufficiently reliable to be admitted. *See, e.g., Ruiz-Troche v. Pepsi-Cola of Puerto Rico Bottling Co.*, 161 F.3d 77, 81 (1st Cir. 1998) (after *Joiner*, "trial judges may evaluate the data offered to support an expert's bottom-line opinions to determine if that data provides adequate support to mark the expert's testimony as reliable"); *Domingo v. T.K.*, 289 F.3d 600, 606-07 (9th Cir. 2002) (holding that the studies on which the expert relied "do not . . . provide support for his conclusion," and thus his testimony was properly excluded).

This Court should grant review and hold that the Tenth Circuit erred by refusing to evaluate whether the conclusions

of plaintiffs' experts were supported by the facts of this case. *Joiner* suggests that in many cases, an expert's reliability cannot adequately be assessed absent consideration of the expert's ultimate conclusion. As this Court explained:

> [C]onclusions and methodology are not entirely distinct from one another. Trained experts commonly extrapolate from existing data. But nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence which is connected to existing data only by the *ipse dixit* of the expert. A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered.

522 U.S. at 146.

Under the Tenth Circuit's erroneous approach, an expert can evade the *Daubert* inquiry and offer a patently flawed conclusion to the jury as long as he can claim that his methodology is based on Newton's laws or well-settled principles of physics. *Daubert* and *Joiner* plainly require more: the fact that large copper sulfide particles are "the kind of thing" that have been shown to cause leaks, Pet. App. 14a, does not entitle an expert to offer a conclusion that minuscule particles also can cause leaks absent evidence that supports this conclusion.

II. REVIEW IS WARRANTED TO CLARIFY WHETHER *DAUBERT*'S "FIT" REQUIREMENT DEMANDS MORE THAN MERE RELEVANCE.

The Tenth Circuit also misapplied *Daubert*'s relevance standard. As shown above, plaintiffs' experts were unable to present a theory of causation that accounted for the actual facts of this case. All they could do was extrapolate from general principles to offer specific conclusions that were demonstrably suspect.

The Tenth Circuit affirmed the admission of this expert testimony by construing *Daubert*'s "fit" requirement as de-

manding nothing more than a showing of mere relevance under Federal Rule of Evidence 401. Pet. App. 10a. Specifically, the court stated that the "fit" requirement calls upon "[a] trial court [to] look at the logical relationship between the evidence proffered and the material issue that evidence is supposed to support to determine if it advances the purpose of aiding the trier of fact." *Id.* The court deemed the "fit" requirement satisfied in this case because the experts' testimony "would aid the jury in resolving a factual dispute." *Id.* at 19a.

As shown below, the Tenth Circuit's interpretation of the "fit" requirement cannot be reconciled with *Daubert* and its progeny, and exacerbates the confusion in the lower federal courts over how to evaluate the relevance of expert testimony.

A. The Ruling Below Conflicts With Decisions Of This Court.

In *Daubert*, this Court held that expert testimony must be not just "reliable" but also "relevant" in order to be admitted under Federal Rule of Evidence 702. 509 U.S. at 589. The Court made clear that "relevance" for purposes of expert testimony under Rule 702 is different and more demanding than "relevance" for purposes of non-expert testimony under Rule 401. Specifically, Rule 702 imposes a heightened relevance standard that requires "a valid scientific connection to the pertinent inquiry as a precondition to admissibility." *Id.* at 592. The Court labeled this increased level of relevance "fit." *Id.* at 591.

Joiner elaborated on and strengthened the "fit" requirement. In that case, the Court emphasized that experts must rely on data or studies that can sufficiently support their opinions based on the particular facts at issue. As the Court explained, "[t]he issue was whether *these* experts' opinions were sufficiently supported by the . . . studies on which they purported to rely." 522 U.S. at 144.

In *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999), the Court again held that expert testimony must "fit" the par-

ticular facts of the case. Thus, regardless of whether the approach used by a tire expert was reasonable "in general," the salient question "was the reasonableness of using such an approach, along with [the expert's] particular method of analyzing the data thereby obtained, to draw a conclusion regarding *the particular matter to which the expert testimony was directly relevant*." *Id.* at 153-54. Put differently, "[t]he relevant issue was whether the expert could reliably determine the cause of *this* tire's separation." *Id.* at 154.

Daubert, *Joiner* and *Kumho Tire* demonstrate that admissible expert testimony must be more than merely relevant in the Rule 401 sense. They hold that experts are not permitted to offer opinions that do not "fit" the particular facts of the case. *See Concord Boat Corp. v. Brunswick Corp.*, 207 F.3d 1039, 1055 (8th Cir. 2000) (noting the "renewed emphasis" that *Joiner* and *Kumho Tire* have put "on the importance of the 'fit' of an expert's opinion to the data or facts in the case").

The Tenth Circuit's approach to "fit" cannot be reconciled with these decisions. Sommer's opinion that copper sulfide particles built up on the safety valve seat in this particular case and prevented the valve from snapping shut when the pilot light went out was nothing more than rank speculation. He never determined whether the tiny copper sulfide particles, together with grease on the valve seat, were capable of holding the valve open. Nor did he ever determine whether particles that might have been large enough to cause a leak could have passed through or around the mesh screen. Nor, after the safety valve proved to be working properly in post-accident tests, did Sommer continue to test that valve to see if it would "intermittent[ly]" fail, as he hypothesized. Pet. App. 5a.

Instead, he based his testimony on the fact that (1) some tiny copper sulfide particles were found in the gas control area and on the safety valve seat, and (2) large copper sulfide particles have been known in other instances—instances involving gas controls *without* a mesh screen—to collect on

safety valve seats to prevent them from closing properly. Leaping from that general data to the conclusion that far smaller copper sulfide particles prevented the safety valve from closing in *this* case constitutes "too great an analytical gap," *Joiner*, 522 U.S. at 146, to satisfy the "fit" requirement. "The relevant issue was whether the expert could reliably determine the cause of *this* [propane gas explosion]," *Kumho Tire*, 526 U.S. at 154, and the Tenth Circuit's approach—allowing experts to testify based on a mere showing of general relevance—conflicts with this Court's precedent.

B. The Ruling Below Adds To The Confusion In The Lower Federal Courts Over *Daubert*'s Relevance Prong.

The federal courts of appeals have not applied a consistent approach in determining whether an expert's testimony sufficiently "fits" with the facts of the case to be admissible under *Daubert*'s heightened relevance standard. Prior to the Tenth Circuit's holding in this case, at least two separate interpretations of relevance for purposes of expert testimony had developed: some courts ignore the "fit" requirement altogether and cite only to Rule 401's definition of relevance, whereas other courts require a close connection between the expert's conclusion and the facts of the case. The Tenth Circuit's approach, which relies on Rule 401 while still purporting to consider "fit," adds a third approach to an already uncertain legal landscape.

The Second Circuit has repeatedly taken the first approach. In articulating the relevance inquiry called for under *Daubert*, that court has regularly disregarded the notion of "fit" and cited only to Rule 401. *E.g.*, *Campbell v. Metro. Prop. and Cas. Ins. Co.*, 239 F.3d 179, 184 (2d Cir. 2001) (quoting Rule 401's definition of relevance and not discussing "fit" at all); *Zuchowicz v. United States*, 140 F.3d 381, 387 (2d Cir. 1998) (not discussing "fit" in holding that so long as an expert's opinion is based on a reliable methodology it should be admitted). This approach is flatly contrary to *Daubert* and its progeny.

The second approach has been more commonly followed. In *In re Paoli Railroad Yard PCB Litigation*, 35 F.3d 717 (3d Cir. 1994), for example, the Third Circuit squarely held that under *Daubert*, "the standard for fit is higher than bare relevance." *Id.* at 745 n.13. The court explained that "fit" requires "that the scientific knowledge must be connected to the question at issue." *Id.*[3] Like the Third Circuit, the Eleventh Circuit has contrasted the "liberal admission of evidence" standard reflected in Rules 401 and 402 with *Daubert*'s "more stringent standards of reliability and relevance." *Allison v. McGhan Med. Corp.*, 184 F.3d 1300, 1310 (11th Cir. 1999).

The First Circuit similarly has described *Daubert* as imposing a "special relevancy requirement," known as "fit." *Ruiz-Troche v. Pepsi-Cola of Puerto Rico Bottling Co.*, 161 F.3d 77, 81 (1st Cir. 1998). "To be admissible, expert testimony must be relevant not only in the sense that all evidence must be relevant, *see* Fed. R. Evid. 402, but also in the incremental sense that the expert's proposed opinion, if admitted, likely would assist the trier of fact to understand or determine a fact in issue." *Id.*; *see also Bocanegra v. Vicmar Servs., Inc.*, 320 F.3d 581, 584 (5th Cir. 2003) (articulating the heightened Rule 702 relevance requirement in nearly identical terms).

The Tenth Circuit combined these two distinct approaches identified above and created a separate hybrid approach. Like the Second Circuit, it first defined "relevance"

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[3] Since 1985, the Third Circuit has been a leading contributor to the law governing questions of the admissibility of expert testimony. In *United States v. Downing*, 753 F.2d 1224 (3d Cir. 1985), the court correctly anticipated this Court's 1993 decision in *Daubert* and rejected the then-prevailing *Frye* test as the proper standard for admissibility of expert testimony. *See id.* at 1237. The *Downing* court also held that Rule 702 requires proffered expert testimony to be "sufficiently tied to the facts of the case that it will aid the jury in resolving a factual dispute." *Id.* at 1242. Judge Becker described this concept as a question of "fit," *id.*, and this Court later adopted that term in *Daubert*. *See Daubert*, 509 U.S. at 591.

for purposes of *Daubert* under the Rule 401 formulation. The court then purported to apply a "fit" requirement to the plaintiffs' experts' theory, but misconstrued the requirement to allow the admission of expert testimony that plainly did not account for the particular facts of this case.

The Tenth Circuit's loose approach to relevance conflicts with the approaches of other courts. For example, in *McDowell v. Brown*, 392 F.3d 1283 (11th Cir. 2004), the Eleventh Circuit upheld the exclusion of expert opinions that consisted of guesswork, rested on untested theories, and "leap[t] from . . . accepted scientific premise[s] to . . . unsupported one[s]." *Id.* at 1300-01. The court was considering the admissibility of medical expert testimony on causation that "essentially boil[ed] down to an opinion that earlier surgical intervention would [have been] preferable." *Id.* at 1301 (internal quotation marks omitted). The court explained that the experts "made the leap from this presumably accepted scientific principle to an unsupported scientific principle that a delay of more than four hours caused [the plaintiff's] injuries." *Id.* at 1302 (internal quotation marks omitted). Because "[t]his 'leap of faith' was supported by little more than the fact that early treatment begets improved recovery" and the experts "provided no existing research detailing the extent of injury or recovery at different time intervals," the proffered medical theories were neither reliable nor did they "'fit' as evidence relevant to the cause of the plaintiff's injuries." *Id.* at 1301-02.

Here, Sommer's theory that copper sulfide particles can gather in sufficient quantities so as to jam safety valves may be an accepted scientific principle as far as it goes, but it does not answer the question of what quantities would be sufficient to cause such a jam—or whether there were copper sulfide particles large enough to cause a jam in plaintiffs' valve. Nor was Sommer able to overcome that gap through evidence that tiny copper sulfide particles were discovered in plaintiffs' gas control. Because he did not know whether those tiny particles were actually capable of holding open the spring-actuated valve, Sommer's conclusion to that effect

was simply his "subjective belief or unsupported speculation." *Daubert*, 509 U.S. at 590. Under the Eleventh Circuit's rigorous approach to "fit" as reflected in *McDowell*, Sommer's opinion would have been excluded.

The Tenth Circuit's decision is also at odds with the Eighth Circuit's application of the "fit" requirement in *Concord Boat Corp. v. Brunswick Corp.*, 207 F.3d 1039 (8th Cir. 2000). In that case, the Eighth Circuit overturned the admission of an expert's testimony in an antitrust case because the expert failed to incorporate all of the relevant circumstances into his analysis. The court first explained that "expert testimony must not only be based on reliable science but must also 'fit' the particular facts of the case," and "[i]f a party believes that an expert opinion has not considered all of the relevant facts, an objection to its admission is appropriate." *Id.* at 1055-56. "Even a theory that might meet certain *Daubert* factors, such as peer review and publication, testing, known or potential error rate, and general acceptance, should not be admitted if it does not apply to the specific facts of the case." *Id.* at 1056 (internal footnote omitted). Accordingly, because the expert's opinion was "deficient" in that it did not account for "all aspects of the economic reality" in the relevant market, "the expert's resulting conclusions were mere speculation" and should have been excluded. *Id.* at 1057 (internal quotation marks omitted). Here, Sommer similarly ignored the relevant circumstances in reaching his speculative conclusion about causation. His theory failed to explain how tiny specks of copper sulfide—as opposed to large particles—could possibly have prevented the safety valve from slamming shut.

These cases illustrate that courts are applying different relevance standards and different approaches to *Daubert*'s "fit" requirement. Review by this Court is warranted to dispel the confusion and make clear that the Tenth Circuit's relaxed approach is inconsistent with *Daubert*'s rigorous gatekeeping requirements.

III. REVIEW IS WARRANTED TO CLARIFY WHEN TESTING IS NECESSARY TO PROVE RELIABILITY.

This Court has recognized that district courts have discretion to determine which of *Daubert*'s four reliability factors to apply in any given case. Here, the district court and Tenth Circuit excused plaintiffs' experts from actually testing their theory, even though such testing was readily available and would have confirmed the validity (or lack thereof) of their opinions. This case demonstrates the need for this Court to clarify that a district court does not have unlimited discretion to dispense with *Daubert*'s reliability guideposts. This Court should hold that where, as here, testing could easily have been performed and would have quickly confirmed whether plaintiffs' causation theory—and thus their entire case—had any merit, the district court abused its discretion by allowing the presentation of untested opinions.

In *Daubert*, the Court placed special emphasis on testing, holding that "[o]rdinarily, a key question to be answered in determining whether a theory or technique is scientific knowledge that will assist the trier of fact will be whether it can be (and has been) tested." 509 U.S. at 593. Because "'[t]he criterion of the scientific status of a theory is its falsifiability, or refutability, or testability,'" it follows that "'[t]he statements constituting a scientific explanation must be capable of empirical test.'" *Id.* (quoting K. Popper, *Conjectures and Refutations: The Growth of Scientific Knowledge* 37 (5th ed. 1989) and C. Hempel, *Philosophy of Natural Science* 49 (1966)). Courts have generally recognized the testing factor as "*Daubert*'s most significant guidepost." *Chapman v. Maytag Corp.*, 297 F.3d 682, 688 (7th Cir. 2002).

Likewise, in *Kumho Tire*, the Court held that, although all four *Daubert* factors may not be applicable in every case, "a trial court should consider the specific factors identified in *Daubert* where they are reasonable measures of the reliability of expert testimony." 526 U.S. at 152. Three members of this Court joined in a concurring opinion to emphasize that

trial courts must not abdicate their gatekeeping function, and added that "[t]hough, as the Court makes clear today, the *Daubert* factors are not holy writ, in a particular case the failure to apply one or another of them may be unreasonable, and hence an abuse of discretion." *Id.* at 159 (Scalia, J., concurring, joined by O'Connor & Thomas, JJ.).

This is such a case. In excusing the plaintiffs' experts' failure to test, the Tenth Circuit did *not* find that testing would have been difficult or burdensome. Rather, the court explained that *Daubert*'s testing factor is "aimed at theories purporting to explain the causal relations among regularly occurring natural phenomena," such as "the movement of celestial bodies." Pet. App. 13a. Thus, because plaintiffs' experts were not "propos[ing] a theory that modifies otherwise well-established knowledge about [a] regularly occurring phenomenon," and because large copper sulfide particles have been known to cause leaks in other cases, the need for testing was relaxed. *Id.*

This reasoning cannot be reconciled with *Daubert* and *Kumho Tire*. Those cases do not suggest that experts are excused from testing their theories so long as they are not seeking to "modif[y] otherwise well-established knowledge." Pet. App. 13a. Indeed, such an approach deprives the gatekeeping requirement of almost any constraining force, in that virtually any expert could justify his failure to test simply by asserting that his theory did not seek to modify or overturn Newton's laws of physics.

Moreover, contrary to the Tenth Circuit's view, plaintiffs' experts were not simply offering testimony on the general question of whether "copper sulfide particles are the kind of thing that when lodged on the valve seat can cause leaks." Pet. App. 14a. Before being admitted as reliable testimony, their theory should have been tested to ensure that there was a scientifically supportable basis to support their conclusion

that tiny copper sulfides built up to cause a leak in *this* case. *Cf. Kumho Tire*, 526 U.S. at 154.[4]

Numerous courts have required testing in circumstances very similar to those presented here. In *Chapman*, for example, the Seventh Circuit held that an expert's failure to test his theory in a product liability case rendered it inadmissible and required reversal. The court explained:

> In our opinion, the absence of any testing indicates that [the expert's] proffered opinions cannot fairly be characterized as scientific knowledge. Personal observation is not a substitute for scientific methodology and is insufficient to satisfy *Daubert*'s most significant guidepost. [The expert's] opinions amount to nothing more than unverified statements unsupported by scientific methodology.

297 F.3d at 688.

Other courts have similarly placed a heavy emphasis on testing, particularly in product liability cases. *See, e.g., Watkins v. Telsmith, Inc.*, 121 F.3d 984, 992 (5th Cir. 1997) (excluding product liability expert who failed to test); *Am. & Foreign Ins. Co. v. Gen. Elec. Co.*, 45 F.3d 135, 139 (6th Cir. 1995) (same); *Cummins v. Lyle Indus.*, 93 F.3d 362, 368 (7th Cir. 1996) ("Our cases have recognized the importance of testing in alternative design cases."); *Peitzmeier v. Hennessy Indus., Inc.*, 97 F.3d 293, 297 (8th Cir. 1996) (excluding expert who failed to test); *Cabrera v. Cordis Corp.*, 134 F.3d 1418, 1423 (9th Cir. 1998) (excluding expert who failed to test in product liability case).

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[4] Testing would have been particularly appropriate in this case because the experts' use of "differential diagnosis" was suspect. In fact, their "differential diagnosis" approach has apparently never been endorsed outside the medical context—a point acknowledged by the Tenth Circuit, Pet. App. 16a-17a—and has been squarely rejected by at least one court as an inappropriate way to determine the cause of a propane gas explosion. *See Stibbs v. MAPCO, Inc.*, 945 F. Supp. 1220, 1224 (S.D. Iowa 1996).

These differing approaches to *Daubert*'s gatekeeping requirements can and do lead to widely varying outcomes among the circuits when an expert seeks to offer an untested theory. Particularly in product liability cases, where the plaintiff's (or the defendant's) entire case often depends on expert testimony concerning causation or defect, guidance from this Court is needed.

CONCLUSION

The petition for a writ of certiorari should be granted.

Respectfully submitted.

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May 9, 2005

APPENDIX A

FILED
United States Court of Appeals
Tenth Circuit
DEC 6, 2004
PATRICK FISHER
Clerk

[As amended on partial grant of rehearing Feb. 9, 2005]

PUBLISH

UNITED STATES COURT OF APPEALS

TENTH CIRCUIT

FRED D. BITLER; PEGGY A. BITLER; COLORADO COMPENSATION INSURANCE AUTHORITY, a political subdivision of the State of Colorado, Plaintiffs – Appellees, v. A.O. SMITH CORPORATION, a foreign corporation; NATIONAL PROPANE CORP., formerly known as All Seasons Propane, a Colorado corporation, Defendants,	No. 02-1527

and

WHITE RODGERS, a subsidiary of EMERSON ELECTRIC CORP., a foreign corporation,

Defendant – Appellant.

Appeal from the United States District Court for the District of Colorado (D.C. Nos. 98-N-1897 and 98-BB-1897)

Daniel A. Nelson (Bruce A. Lampert, with him on the briefs), Schaden, Katzman, Lampert & McClune, Broomfield, Colorado, for Plaintiffs-Appellees Fred and Peggy Bitler.

Andrew M. Low (Peter J. Krumholz, with him on the briefs), Davis, Graham & Stubbs LLP, Denver, Colorado, for Defendant-Appellant.

Before **LUCERO**, **McKAY** and **HARTZ**, Circuit Judges.

LUCERO, Circuit Judge.

Danger lurked in Fred and Peggy Bitler's basement, liability for which is the occasion for the present appeal. Mr. Bitler was severely burned when a gas explosion occurred in the basement of his home. On filing a products liability suit against, inter alia, White-Rodgers as manufacturer of the gas control installed in his basement water heater, a jury returned a verdict finding negligence and product defect and awarded damages to the Bitlers. White-Rodgers' motions for JNOV and a new trial having been denied by the district court, the present appeal followed. In contesting the jury verdict im-

posing products liability on it for the explosion, White-Rodgers assigns as principal error the district court's admission of plaintiffs' expert testimony under *Daubert* principles. We exercise jurisdiction under 28 U.S.C. § 1291 and **AFFIRM**.

I

Fred and Peggy Bitler resided in a house provided for their use on the Oldland Ranch outside of Meeker, Colorado where Fred Bitler was a ranch hand. On the evening of the accident, July 25, 1996, Bitler discovered that there was no hot water when he attempted to shower. Hot water was supplied to the Bitlers' home by a liquid propane hot water heater located in the basement. Donning sweat pants, he proceeded to the basement door, unlatched it, and walked approximately two-third's of the way down the staircase when a large explosion occurred, knocking him backwards. His wife, Peggy Bitler, was thrown off a sofa and onto the floor, which was later determined to have been raised several inches by the force of the explosion. Fred Bitler sustained severe burns, and after being flown by helicopter to a hospital, underwent multiple skin graft surgeries over the following weeks. It was established at trial that he has, in addition to general disfigurement, continuing problems with regulation of his body temperature, use of his hands, growth of hair follicles, and he will also need additional procedures in the future to develop nail growth on his hands. As a result of the injuries he sustained in this accident, he is no longer able to perform the duties appertaining to his former occupation as a cowboy and ranch hand.

There were three gas propane appliances in the Bitlers' home—a cook stove in the kitchen, a furnace in a bedroom, and a space heater in one of the bedrooms. Gas was supplied to the water heater via unsupported, flexible copper tubing that ran along the basement ceiling joints. A "T-fitting" was located above the hot water heater which provided branches

running to the hot water heater and the space heater. Post-accident inspection revealed a minor leak at the inlet to the bedroom heater, and a leak at the "T-connector."

White-Rodgers, a subdivision of Emerson Electric Co., manufactured the water heater gas control used in the Bitlers' hot water heater. This gas control regulates the flow of gas to the pilot and main burner of the water heater, and is designed to fulfill a crucial safety role if the pilot light is extinguished. To avoid a gas leak that could lead to an explosion or fire, the gas control is designed to shut off all gas flow to the pilot when the pilot is extinguished. As is well known, a lit pilot heats a thermocouple which in turn creates an electric current energizing an electromagnet that holds the safety valve open against the force of a spring. So long as the pilot is lit, the safety valve remains open. If the pilot goes out, however, the thermocouple will no longer be heated and will no longer produce a current to energize the electromagnet, allowing the spring to snap the valve shut. The safety valve seat is made of rubber, and is designed to create a seal against a circular metal surface when closed to prevent the flow of gas to the pilot.

Copper sulfide is a frequent contaminate found in gas and propane lines. If copper sulfide particles of sufficient size become lodged on a safety valve seat when a pilot is extinguished, the particles may prevent the valve from sealing, resulting in a gas leak. It was established that numerous accidents have occurred in this manner, and that copper sulfide contamination was a significant source of concern for White-Rodgers. As a consequence, White-Rodgers modified the design of the safety valve in 1978 and began installing a wire mesh screen in the gas inlet, upstream from the safety valve to prevent copper sulfide particles from migrating onto the rubber valve seat. In further recognition of the safety hazard caused by copper sulfide contamination, White-Rodgers recalled all gas controls lacking the mesh screen in 1980.

Thereafter, White-Rodgers also began adding another safety feature to the mesh screen by installing a deflection "baffle" to aid in preventing debris from reaching the valve and to hold the edges of the mesh screen in place more effectively. The safety valve installed in the Bitler's water heater was one of about 200,000 devices produced in the interim that contained the mesh screen, but did not contain the baffle.

As a result of their investigations, plaintiffs' expert Elden Boh concluded that the water heater was the source of the accident, and plaintiffs' expert Donald Sommer concluded that the leak was caused by copper sulfide contamination on the water heater's safety valve seat. Elden Boh is a fire investigator hired by the Colorado Farm Bureau, and Donald Sommer is an engineer and accident investigator retained by the Bitlers. Although White-Rodgers contests the admissibility of these two experts on appeal, plaintiffs' expert W. Alan Bullerdiek, a chemical engineer, also testified concerning the history of copper sulfide-contamination-related accidents, and that the amount of contamination found on the Bitlers' safety valve seat was at an unacceptable level.

During post-accident testing of the safety valve installed in the Bitlers' water heater, the device was disassembled in the presence of representatives of both White-Rodgers and the Bitlers. Copper sulfide particulate contamination was discovered downstream of the mesh screen and found on the safety valve seat. During the teardown, a test of the valve revealed that it snapped shut as designed. Plaintiffs' expert, Donald Sommer, opined at trial that a mix of copper sulfide particles and grease located on the safety valve seat caused the leak. Mr. Sommer testified that the valve seat was altered after the accident when the control was turned to the "off" position; furthermore, he testified that because copper sulfide contamination leads to intermittent leaks, the teardown test could not be determinative. Whether the particles found on

the safety valve were large enough or of sufficient quantity to have caused the gas leak in the present case is hotly disputed.

Having marshaled their expert witnesses and having ruled out to their satisfaction all other sources of the gas leak save for the gas control on the water heater, the Bitlers filed suit in Colorado State Court against White-Rodgers, as well as A.O. Smith Corporation, which manufactured the water heater, and National Propane Corporation, which installed and maintained the water heater and propane piping in the house. After removing the case to federal district court, defendants moved for summary judgment, contesting the admission of the plaintiffs' expert testimony as insufficiently reliable and lacking a firm foundation in science. In an order denying the motion, the trial judge found that the Bitlers' proposed expert testimony was relevant and reliable in accord with the standard required by *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579 (1993). The matter proceeded to a two-week jury trial, at the close of which the jury returned a verdict against White-Rodgers and National Propane, attributing fifty percent of the fault to National Propane and forty percent to White-Rodgers, and awarding $2,319,492.27 in damages to the Bitlers. As to White-Rodgers specifically, the jury found both negligence and product defect. In its order of October 30, 2002, the district court denied White-Rodgers' motions for judgment as a matter of law and for a new trial. This appeal followed.

II

We review de novo whether the district court properly performed its role as "gatekeeper" in admitting or excluding expert testimony. *Dodge v. Cotter Corp.*, 328 F.3d 1212, 1223 (10th Cir. 2003) ("Though the district court has discretion in how it conducts the gatekeeper function, we have recognized that it has no discretion to avoid performing the gatekeeper function."). We review for abuse of discretion the manner in which the district court exercises its *Daubert*

"gatekeeping" role in making decisions whether to admit or exclude testimony. *General Elec. Co. v. Joiner*, 522 U.S. 136, 139 (1997). We will not, however, disturb a district court's ruling absent our conviction that it is arbitrary, capricious, whimsical, manifestly unreasonable, or clearly erroneous. *Goebel v. Denver and Rio Grande W. R.R. Co.*, 346 F.3d 987, 990 (10th Cir. 2003). The district court must, however, make specific factual findings on the record which are sufficient for an appellate court to review the trial court's conclusion concerning whether the testimony was scientifically reliable and factually relevant. *Dodge*, 328 F.3d at 1223. Our standard of review of a trial court's factual findings in pursuit of its gatekeeping role does not vary when examining exclusion or admission of expert testimony. Our focus on review mirrors that of the trial judge's assessment of the testimony itself: we are concerned with the trial court's performance of its obligation under Rule 702 and *Daubert*, not upon the exact conclusions reached to exclude or admit expert testimony. *See Goebel*, 346 F.3d at 1001 (holding that district court did not abuse its discretion in admitting expert testimony); *Mitchell v. Gencorp Inc.*, 165 F.3d 778, 784 (10th Cir. 1999) (holding that the district court did not abuse its discretion in excluding expert testimony). Thus, although the district court "must, on the record make *some* kind of reliability determination," *United States v. Velarde*, 214 F.3d 1204, 1209 (10th Cir. 2000), we recognize the wide latitude a district court has in exercising its discretion to admit or exclude expert testimony.

A

White-Rodgers assigns as a principal source of error the district court's performance of its *Daubert* gatekeeping functions. We begin our inquiry into the admissibility of the Bitlers' expert testimony with Fed. R. Evid. 702. In accord with Rule 702, the Supreme Court has determined that the trier of fact "must ensure that any and all scientific testimony or evi-

dence is not only relevant, but reliable." *Daubert*, 509 U.S. at 589. To fulfill its gatekeeping role, a district court must therefore conduct a two-part inquiry.

First, a district court must determine if the expert's proffered testimony—whether it concerns scientific, technical, or other special knowledge—has "a reliable basis in the knowledge and experience of his [or her] discipline." *Id.* at 592; *see also*, *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 149, (1999) (holding that *Daubert*'s general principles apply to all expert matters under Rule 702). By conducting a preliminary inquiry into the expert's qualifications and the admissibility of proffered evidence, a district court fulfills its initial obligation under Fed. R. Evid. 104(a) ("Preliminary questions concerning the qualification of a person to be a witness . . . or the admissibility of evidence shall be determined by the court"). To determine whether expert testimony is admissible requires a trial court to examine "whether the reasoning or methodology underlying the testimony is scientifically valid . . . ." *Daubert*, 509 U.S. at 592-93. In order to establish an expert's testimony as reliable, we have held that:

> The plaintiff need not prove that the expert is undisputably correct or that the expert's theory is "generally accepted" in the scientific community. Instead, the plaintiff must show that the method employed by the expert in reaching the conclusion is scientifically sound and that the opinion is based on facts which sufficiently satisfy Rule 702's reliability requirements.

Mitchell, 165 F.3d at 781 (citation omitted).

Providing guidance as to the kinds of factors that might bear on a judge's gatekeeping determination, the Supreme Court has suggested that a court consider: (1) whether a theory has been or can be tested or falsified, (2) whether the theory or technique has been subject to peer review and pub-

lication, (3) whether there are known or potential rates of error with regard to specific techniques, and (4) whether the theory or approach has "general acceptance." *Daubert*, 509 U.S. at 593-94. The Court has made clear, however, that this list is neither definitive nor exhaustive and that a trial judge has wide discretion both in deciding how to assess an expert's reliability and in making a determination of that reliability. *Kumho Tire Co.*, 526 U.S. at 150, 152-53; *see also Velarde*, 214 F.3d at 1208-09. While these factors are most relevant in the context of a new and novel scientific theory—asking if it has been tested, subjected to peer review and publication, etc.—they do provide examples of the general kinds of issues a trial court need probe in light of its purpose of ensuring that an expert "employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field." *Kumho Tire*, 526 U.S. at 152. Failure to consider one, or even any, of these factors, albeit suggestive, will not be dispositive of a district court's failure to fulfill its gatekeeping role because that role depends on the underlying factual circumstances of the particular case.

Accordingly, a trial court's focus generally should not be upon the precise conclusions reached by the expert, but on the methodology employed in reaching those conclusions. *Daubert*, 509 U.S. at 595. Although it is not always a straightforward exercise to disaggregate method and conclusion, when the conclusion simply does not follow from the data, a district court is free to determine that an impermissible analytical gap exists between premises and conclusion. *See Joiner*, 522 U.S. at 146; *Dodge*, 328 F.3d at 1222. When examining an expert's method, however, the inquiry should not be aimed at "the exhaustive search for cosmic understanding but for the particularized resolution of legal dis-

putes." *Daubert*, 509 U.S. at 597.[1] Thus it is the specific relation between an expert's method, the proffered conclusions, and the particular factual circumstances of the dispute, and not asymptotic perfection, that renders testimony both reliable and relevant.

Second, in fulfilling its *Daubert* obligations a trial court must also conduct a further inquiry into whether proposed testimony is sufficiently "relevant to the task at hand." *Daubert*, 509 U.S. at 597. Relevant evidence "means evidence having any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence." Fed. R. Evid. 401. The Supreme Court has described the consideration of relevant evidence as one of "fit." *Daubert*, 509 U.S. at 591. A trial court must look at the logical relationship between the evidence proffered and the material issue that evidence is supposed to support to determine if it advances the purpose of aiding the trier of fact. Even if an expert's proffered evidence is scientifically valid and follows

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[1] Determining whether proffered testimony is scientifically reliable can be a considerable challenge for a trial judge. As Justice Breyer has noted, "this requirement will sometimes ask judges to make subtle and sophisticated determinations about scientific methodology and its relation to the conclusions an expert witness seeks to offer—particularly when a case arises in an area where the science itself is tentative or uncertain . . . ." *Joiner*, 522 U.S. at 147-48 (Breyer, J., concurring). To fulfill this task, however, as Judge Posner has observed, "we do not have to become philosophers of science and set forth the necessary and sufficient conditions of 'real' science," or endeavor to discover "the essence of 'science,' if there is such an essence." *Rosen v. Ciba-Geigy Corp.*, 78 F.3d 316, 318 (7th Cir. 1996). We may leave the philosophy of science to the philosophers.

appropriately reliable methodologies, it might not have sufficient bearing on the issue at hand to warrant a determination that it has relevant "fit." *Id.* Testimony concerning the laws of quantum mechanics may be scientifically relevant, but may have no practical relevance to testimony concerning the function and possible failure of a water heater safety valve control. Evidence appropriate for one purpose, therefore, may not be relevant for a different purpose, and it is the trial court's task to make this fitness determination.

B

In fulfilling its *Daubert* gatekeeping function, the district court, in its order denying summary judgment to the defendants, focused on two expert witnesses proposed by the Bitlers: Elden Boh and Donald Sommer. On reviewing the record, we note that the actual testimony offered at trial does not differ in material respects from either Boh's or Sommer's depositions as analyzed by the district court on motions for summary judgment. Nonetheless White-Rodgers argues that the magistrate judge was required to perform a gatekeeping role by entertaining anew, during pre-trial proceedings, defendant's objections to the testimony of Sommer; the magistrate judge instead treated District Judge Nottingham's order denying summary judgment as law of the case, and refused to consider de novo the issue of whether to admit the Bitlers' expert testimony. It is clear, however, that because White-Rodgers did not raise new issues concerning the reliability of the Bitlers' expert witnesses, the district court did not fail to perform its *Daubert* role merely by refusing to reconsider the question of admissibility that had already been decided. *Daubert* does not require a district court to linger at the "gate," as if caught in Zeno's paradox, unable to proceed to the main trial without first conducting a series of mini-trials with regard to every objection raised against a party's expert witnesses.

As to reliability regarding Boh's testimony, the district court specifically found that Boh's methodology in reaching his conclusion about the cause of the explosion was sound. Employing his experience and knowledge as a fire investigator, Boh observed the physical evidence at the scene of the accident and deduced the likely cause of the explosion. Although such a method is not susceptible to testing or peer review, it does constitute generally acceptable practice as a method for fire investigators to analyze the cause of fire accidents. *See Kumho Tire Co.*, 526 U.S. at 150 ("the relevant reliability concerns may focus upon personal knowledge or experience"). Nothing in Rule 702 or *Daubert* requires more. We conclude that the trial court did not abuse its discretion in finding Boh's personal experience, training, method of observation, and deductive reasoning sufficiently reliable to constitute "scientifically valid" methodology.

With regard to the testimony of Donald Sommer, as well as other experts testifying for the Bitlers, White-Rodgers argues that his testimony constituted impermissible speculation because he failed to test his theory that copper sulfide particles passed through and around the mesh screen to lodge on the safety valve seat and thereby cause the gas leak. Furthermore, White-Rodgers argues that Sommer's theory fails to "fit" the known facts that no particles of sufficient size to cause a leak were found on the seat of the valve. Finally, White-Rodgers contests the reliability of the so-called "differential diagnosis" method Sommer employed.

We turn to the issue whether the Bitlers' experts, particularly Sommer, were required to test their theory. No doubt, *Daubert* noted that a key factor in valid scientific methodology is the practice of testing hypotheses to determine whether they can be falsified. *Daubert*, 509 U.S. at 593 (citing Karl Popper, *Conjectures and Refutations: The Growth of Scientific Knowledge* (5th ed. 1989), who emphasized the importance of testing scientific theories to deter-

mine whether they can withstand critical scrutiny). One object of Popper's method of falsification as a way of testing a scientific theory is to acknowledge that any scientific theory is subject to future refutation through further observation and testing. Popper's emphasis, however, is aimed at theories purporting to explain the causal relations among regularly occurring natural phenomena. (Ptolemy's theory of the movement of celestial bodies which hypothesized that the Earth was the center of the solar system, later falsified by Copernicus, is a prominent example of such a scientific theory subject to falsification by further inquiry.) Although we would not conclude from the citation to Popper, or the logical positivist Carl Hempel, *id.* at 593, that the Supreme Court intended to limit a district court's consideration of whether testing would assist the trier of fact only to those instances of scientific knowledge aimed at such causal relations, we do find the emphasis suggested by the citations instructive.

For example, in *Truck Ins. Exch. v. MagneTek Inc.*, 360 F.3d 1206, 1211-1212 (10th Cir. 2004), plaintiff attempted to introduce evidence of a novel theory, "pyrolysis," which hypothesized that wood could ignite at temperatures much lower than normal under particular circumstances. We affirmed the district court's decision to exclude this evidence because plaintiff's experts had failed to test their novel theory sufficiently to demonstrate its scientific reliability. *Id.* at 1213. When an expert proposes a theory that modifies otherwise well-established knowledge about regularly occurring phenomenon, such as the normal ignition temperature of wood, we would expect the importance of testing as a factor in determining reliability to be at its highest. Here, by contrast, plaintiffs' experts propose a theory about how the accident occurred given the known science of copper sulfide particulate contamination as a cause of propane gas leaks. What distinguishes the present case is that the need for testing is not at its highest because the reliability of the science of copper sulfide contamination is not in dispute, and thus the dis-

trict court did not abuse its discretion in finding that the presence of a screen did not alter the reliability of the fundamental science.

Whether the Bitlers established that the copper sulfide particles and grease found on the valve seat caused this accident is a matter the district court determined goes to the sufficiency of the evidence—not its scientific reliability. Defendants misunderstand what is at stake in a reliability analysis when they claim that the mere addition of a screen fundamentally and necessarily changed the nature of the underlying science such that the district court abused its discretion in admitting plaintiffs' expert testimony. No doubt, presence of the screen changed the causal analysis the jury was required to conduct based on the conflicting evidence presented, but the presence of a screen did not change the analysis into one that necessarily required further testing to determine its scientific reliability. The core science—that copper sulfide particles are the kind of thing that when lodged on the valve seat can cause leaks—is sufficiently well-established that the district court did not abuse its discretion in finding it reliable. The core dispute—whether copper sulfide particles found on the valve seat in this case were sufficient to cause a leak—is one the district court could properly determine is a question for the jury. In light of this evidentiary dispute, the Bitlers need only establish by a preponderance of the evidence that copper sulfide particles caused the gas explosion in their basement. *See, e.g., Kaiser Found. Health Plan v. Sharp*, 741 P.2d 714, 719 (Colo. 1987). Had their experts conducted further tests on their water heater's safety valve and established by observation that it did intermittently fail, they may have established causation to a near certainty. But

such a high degree of certainty is not required.[2] Thus, because testing is not necessary in all instances to establish reliability under *Daubert*, and because the district court reasonably found that it was not required by the particular factual circumstances of this case, we conclude that the district court did not abuse its discretion in admitting the Bitlers' experts' testimony.

With regard to White-Rodgers' argument that the Bitlers' experts impermissibly relied on a method of "differential diagnosis," we note that the term is being used analogically to its proper use in a medical context; nonetheless, we conclude that in this circumstance it is a valid scientific technique to establish causation.[3] Concerning the method he

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[2] As to alleged shortcomings of the proffered testimony, these go to "the weight which the trier of fact should accord the evidence and do not make the testimony incredible." *Orth v. Emerson Elec. Co.*, 980 F.2d 632, 637 (10th Cir. 1992). Nowhere does Rule 702 or *Daubert* require a finding that an expert's proffered testimony reach absolute certainty with regard to the likely truth of a conclusion. *See Daubert*, 509 U.S. at 590 ("Of course, it would be unreasonable to conclude that the subject of scientific testimony must be 'known' to a certainty; arguably, there are no certainties in science.").

[3] Urging us to adopt the analysis in *Stibbs v. Mapco*, 945 F. Supp. 1220 (D. Iowa 1996), which also involved a LP gas explosion implicating one of their controls, White-Rodgers argues that the inference involved in differential diagnosis "turns scientific analysis on its head." *Id.* at 1226. We reject this reasoning as itself fundamentally unsound as we explain *infra*. Furthermore, we adopt the district court's apt analysis distinguishing *Stibbs* on its facts from the present case—*viz.*, in *Stibbs* the plaintiff's evidence consisted of a mark on the safety valve and the absence of a leak

[Footnote continued on next page]

employed in his investigation, Sommer testified that he undertook a process of eliminating alternative possible causes, determining that these possibilities were improbable sources of the explosion, and arriving at a highly probable cause for the gas leak, calling it a method of "differential diagnosis." "Differential diagnosis," is "the determination of which of two or more diseases with similar symptoms is the one from which the patient is suffering, by a systematic comparison and contrasting of the clinical findings." *Stedman's Medical Dictionary* 492 (27th ed. 1995).[4] In the medical context, differential diagnosis is a common method of analysis, and federal courts have regularly found it reliable under *Daubert*. *Goebel*, 346 F.3d at 999 (concluding that a district court may admit a differential diagnosis it determines is reliable); *Westberry v. Gislaved Gummi AB*, 178 F.3d 257, 262 (4th Cir. 1999) (holding that differential diagnosis is a reliable technique "of identifying the cause of a medical problem by eliminating the likely causes until the most probable one is isolated"); *Clausen v. M/V New Carissa*, 339 F.3d 1049, 1058-59 (9th Cir. 2003) (recognizing differential diagnosis as a reliable method); *Zuchowicz v. United States*, 140 F.3d 381, 387 (2d Cir. 1998) (upholding district court decision to admit differential diagnosis testimony). What is not so clear

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[Footnote continued from previous page]

elsewhere, with no evidence of debris downstream nor testimony as to how debris could have migrated past the screen.

4 Used in its traditional medical sense, the term refers "to the diagnosis of disease, and refers to the process of identifying external causes of diseases and conditions as 'determining cause' . . . as the circumstances warrant." Federal Judicial Center, *Reference Manual on Scientific Evidence* 444 (2d ed. 2000).

is whether "differential diagnosis" is an appropriate method when employed outside of the medical context.

Here, however, the Bitlers' experts use a general method more aptly characterized as a process of reasoning to the best inference.[5] The Bitlers' experts must reason, as it were, backwards to the cause of a single explosion, and to do so requires a process of eliminating possible causes as improbable until the most likely one is identified. For example, Sommer and Boh both testified to how they eliminated the gas leaks in the bedroom and the T-connector above the water heater as likely sources of the accident; the one was not located close enough to the source of the explosion, and the other was itself most likely the result of trauma caused by the explosion. Sommer testified that the force of the explosion lifted the house off its foundation, and accordingly, was the most probable cause of the leak at the T-connector, especially in light of its damaged physical condition. Experts must provide objective reasons for eliminating alternative causes when employing a "differential analysis." *See Clausen*, 339 F.3d at 1058. Furthermore, the inference to the best explanation must first be in the range of possible causes; there must be some independent evidence that the cause identified is of the type that could have been the cause. *See Joiner*, 522 U.S. at 146 ("[N]othing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence

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[5] Unlike a logical inference made by deduction where one proposition can be logically inferred from other known propositions, and unlike induction where a generalized conclusion can be inferred from a range of known particulars, inference to the best explanation—or "abductive inferences"—are drawn about a particular proposition or event by a process of eliminating all other possible conclusions to arrive at the most likely one, the one that best explains the available data.

that is connected to existing data only by the ipse dixit of the expert."). But more than mere possibility, an inference to the best explanation for the cause of an accident must eliminate other possible sources as highly improbable, and must demonstrate that the cause identified is highly probable.[6] In the present case, it is uncontroverted that if copper sulfide particles of sufficient size became lodged on the safety valve seat, then a gas leak substantial enough to cause the explosion in the Bitlers' basement could occur. Whether or not that actually occurred is a question that may be answered by inference to the best explanation.[7] We see no abuse of discretion, especially in light of our deferential standard of review, in the district court's admitting expert testimony that employs an expert's physical investigation, professional experience, and technical knowledge to establish causation in this case.

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[6] An expert must show that other causes are improbable when conducting differential diagnosis, but '[t]his is not to say that an expert, in order to testify on causation, must be able to categorically exclude each and every possible alternative cause . . . ."—to require otherwise "would mean that few experts would ever be able to testify." Stephen A. Saltzburg et al., *Federal Rules of Evidence Manual* 702-33 (8th ed. 2002). Indeed, "the underlying premise of differential diagnosis is that there is an established connection between certain possible causes and a condition or symptom—then all of the established causes are ruled out but one." *Id.* at 702-35.

[7] As Judge Kozinski noted on remand in *Daubert*: "Not knowing the mechanism whereby a particular agent causes a particular effect is not always fatal to a plaintiff's claim. Causation can be proved even when we don't know precisely *how* the damage occurred, if there is sufficiently compelling proof that the agent must have caused the damage . . . ." *Daubert v. Merrell Dow Pharm.*, 43 F.3d 1311, 1314 (9th Cir. 1995).

Finally, as to the "fit" between the expert testimony and the material issue at stake in this case, White-Rodgers argues that the theory of copper sulfide particulate contamination does not "fit" the facts that the safety valve at issue is a screened valve, and no screened valve had ever been shown to allow sufficient copper sulfide downstream so as to cause a gas leak; furthermore, the valve functioned properly when tested after the accident. This argument confuses a *Daubert* inquiry into relevant "fit" with the jury question of which theory, plaintiffs' or defendant's, best captures the truth of the matter at issue. The former inquiry is aimed at determining if "a valid scientific connection to the pertinent inquiry," *Daubert*, 509 U.S. at 592, obtains as a precondition to the admissibility of expert testimony. Here, the expert testimony "fits" because it involves a reliable method that would aid the jury in resolving a factual dispute; whether the jury finds that the testimony "fits" their best assessment of the truth of the matter is an altogether different issue. Accordingly, the district court did not abuse its discretion in admitting the Bitlers' expert testimony.

Thus, in summation, we conclude that in fulfilling its gatekeeping role pursuant to the Federal Rules of Evidence and *Daubert*, the district court did not abuse its discretion in making its "preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue." *Daubert*, 509 U.S. at 592-3.

III

White-Rodgers argues on appeal that safety valve models lacking an inlet screen are substantially dissimilar from models containing the mesh screen and therefore the district court abused its discretion in admitting plaintiff's evidence of accidents involving the unscreened devices.

At trial, the Bitlers introduced evidence of accidents which involved a model of safety valves exactly the same as the one in the Bitlers' water heater save for the absence of the inlet screen. These accidents occurred when copper sulfide particles contaminated the safety valve of unscreened safety controls, preventing the valve from closing fully and resulting in a gas leak. The purpose of this evidence was to demonstrate a key element of the Bitlers' theory of causation: if copper sulfide particles are allowed downstream to contaminate the valve seat, then the safety valve system could fail. Furthermore, the Bitlers argue that this evidence was necessary to prove notice to White-Rodgers of the potential for their safety valves to fail.

In response, White-Rodgers contends that they offered to stipulate to the failures of the unscreened device, and that therefore the admission of evidence involving accidents with unscreened controls was irrelevant. Although White-Rodgers admits that copper sulphide particles can cause leaks in unscreened models, they argue that there has been no demonstration that screened models are susceptible to sufficient contamination to cause leaks; therefore, they suggest that the presence of a screen makes the Bitlers' safety control substantially dissimilar to unscreened devices. Moreover, because these other accidents involving unscreened controls resulted in injuries and deaths, White-Rodgers argues that the evidence was inherently prejudicial.

We review a district court's decision to admit evidence for abuse of discretion. *Smith v. Ingersoll-Rand Co.*, 214 F.3d 1235, 1246 (10th Cir. 2000). As a threshold matter, we will admit evidence of prior accidents in a products liability suit if it is relevant to the present inquiry. *Id.* To determine relevancy, we must examine whether there is substantial similarity between the evidence offered of prior accidents and the facts at issue in the present case. "Before introducing such evidence, the party seeking its admission must show the

circumstances surrounding the other accidents were substantially similar to the accident involved in the present case." *Wheeler v. John Deere Co.*, 862 F.2d 1404, 1407 (10th Cir. 1988); *Black v. M & W Gear Co.*, 269 F.3d 1220, 1227 (10th Cir. 2001). Determining whether and to what extent proffered evidence of prior accidents involves substantially similar circumstances will depend on the underlying theory of the case advanced by the plaintiffs. If the evidence of other accidents is substantially similar to the accident at issue in a particular case, then that evidence will assist the trier of fact by making the existence of a fact in dispute more or less probable, and the greater the degree of similarity the more relevant the evidence. *See Four Corners Helicopters, Inc. v. Turbomeca, S.A.*, 979 F.2d 1434, 1440 (10th Cir. 1992). Naturally, this is a fact-specific inquiry that depends largely on the theory of the underlying defect in a particular case. *Id.* Accordingly, the district court is owed considerable deference in its determination of substantial similarity.

With regard to the Bitlers' proposed evidence of accidents involving unscreened devices, the district court ruled that these prior accidents involved substantially similar devices to the one involved in the present accident, and accordingly denied the defendant's motion in limine to exclude. In order to demonstrate notice and the existence of a defect, namely the consequences of copper sulfide contamination, the district court ruled that exact similarity between the devices was not required and its absence would not compel exclusion. We have routinely held that federal law permits introduction of substantially similar accidents to show notice, the potential existence of a defect, or to refute defense witness testimony. *Four Corners Helicopters, Inc.*, 979 F.2d at 1440.

In light of the plaintiffs' purposes of showing notice and defect, we do not require a showing of exact similarity, and hence we cannot conclude that the district court erred in ad-

mitting evidence it found substantially similar given the circumstances surrounding the Bitlers' accident. In order to demonstrate that copper sulfide particles were capable of causing a gas leak when contaminating the safety valve seat, it was reasonable and relevant for the plaintiffs to introduce evidence of failures in substantially similar devices under substantially similar circumstances. If contamination could cause gas leaks absent an inlet screen, then if the plaintiffs could show that particles could get through or around the screen—the essence of the plaintiffs' case—it would be reasonable for jurors to make a determination as to causation in the present case. Offering evidence that the industry was aware as early as 1967 that copper sulfide contamination could be a problem for gas control valves served the purpose of demonstrating notice to White-Rodgers and of highlighting the potential existence of a defect—part of the underlying theory of the plaintiff's case which goes to establish a standard in this case for "how substantial the similarity must be . . . ." *Ponder v. Warren Tool Corp.*, 834 F.2d 1553, 1560 (10th Cir. 1987) (citation omitted). Indeed, the district court found that the similarity between the two models of safety valves, for purposes of the trial, was not only substantial, but constituted a "high degree of similarity" in light of other evidence demonstrating that even with the screen, copper sulfide particles were found downstream from the screen. (4 R. at 967.)

We see no error in the district court's finding. Accordingly, we hold that the district court did not abuse its discretion in admitting evidence of prior accidents involving unscreened safety valves.

IV

White-Rogers argues that the district court erred by giving a jury instruction on failure to warn of known and nonobvious defects in its safety valve. Whether a jury was properly instructed in accord with the applicable law and consis-

tent with matters properly within its province is a question we review de novo. *Gardetto v. Mason*, 100 F.3d 803, 816 (10th Cir. 1996). However, we will review for abuse of discretion a district court's exercise of its discretion in giving a particular jury instruction. *Hynes v. Energy West, Inc.*, 211 F.3d 1193, 1197 (10th Cir. 2000).

Arguing that the issue of a duty to warn was not supported by the evidence, and hence not a matter properly submitted to the jury, White-Rodgers objects to the district court's presentation of the following instruction to the jury:

> If A.O. Smith and White-Rodgers, a wholly-owned division of Emerson Electric, as manufacturers or sellers of a product know or in the exercise of reasonable care should know that the use of the product may be harmful or injurious to a user, and such risk of harm or injury is not obvious to a reasonable user, then the manufacturer and seller must use reasonable care to warn the user of the risk of harm or injury if a reasonably careful person would under the same or similar circumstances. The failure to do so is negligence.

(13 R. at 3525.)

As a threshold matter, we are persuaded that White-Rodgers' assignment of error to the district court's jury instruction on a duty to warn is not properly preserved for appeal. At trial, White-Rodgers objected generally to the jury instruction concerning a duty to warn, arguing only that there

is neither a basis for, nor an issue of, a failure to warn.[8] Defendant further objected that plaintiffs failed to establish any evidence for the instruction. Rejecting White-Rodgers' inchoate objections, the district court found "that there is evidence sufficient to allow the jury to determine that White-Rodgers knew prior to this accident of the migration of copper sulfide around the screen only device, which the jury could conclude required a duty to warn." (12 R. at 3057-58.)

On appeal, White-Rodgers now asserts that the jury instruction on a failure to warn was error because plaintiffs presented no evidence of proximate causation. Specifically, Appellant now argues that plaintiffs provided no evidence that a warning would have been effective or what the content of that warning would have been. However, at trial Appellants did not raise an objection as to proximate causation distinctly and did not identify specifically the grounds of the objection before the district court as required by Fed. R. Civ. P. 51(c)(1) ("A party who objects to an instruction or the failure to give an instruction must do so on the record, stating distinctly the matter objected to and the grounds of the objection."); *see also Hynes*, 211 F.3d at 1200. White-Rodgers failed to make abundantly clear the grounds and basis for its objection to the jury instruction on a failure to warn, objecting instead in general terms that there was no issue of warning. *See Weir v. Fed. Ins. Co.*, 811 F.2d 1387, 1390 (10th Cir. 1987) (noting that Rule 51 "requires counsel to make abundantly clear to the trial court the objecting party's position") (quotation omitted). To preserve an objection for appeal, it is not enough for an objecting party merely to raise an objection. Instead, the "grounds stated in [an] objection must

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[8] White-Rodgers' counsel opined generally: "If the product is found to be defective then I guess liability exists. I don't know what we're supposed to warn them about." (11 R. 2995.)

be obvious, plain, or unmistakable." *Id.* (citation omitted); *see also, Medlock v. Ortho Biotech, Inc.*, 164 F.3d 545, 553 (10th Cir. 1999) (noting that "an excessively vague or general objection to the propriety of a given instruction is insufficient to reserve the issue for appeal").

Accordingly, because White-Rogers' objections were not properly specific, the issue of supposed error in the district court's jury instruction regarding failure to warn is not properly preserved for appeal.

V

In the alternative, failing success on its argument to reverse the jury verdict, White-Rodgers argues that the jury award of $150,000 for future wage loss and $75,000 for future medical expenses was not supported by any evidence. When we review a jury's award of damages, we will sustain the award unless it is clearly erroneous or there is no evidence to support the award. *Hudson v. Smith*, 618 F.2d 642, 646 (10th Cir. 1980); *Brown v. Presbyterian Healthcare Servs.*, 101 F.3d 1324, 1330 (10th Cir. 1996).

With regard to the evidence of future wage loss, Mr. Bitler provided tax returns for the years prior and subsequent to the accident and provided testimony concerning his current employment prospects. There is no doubt that evidence was presented that his earnings have declined as a consequence of the accident, and that although he remains employable in some settings, his employment prospects have been substantially diminished. Furthermore, evidence was also offered of benefits he received as a ranch hand, but no longer receives, such as use of the furnished house where the accident occurred and a replacement heifer worth $850, that go beyond his salary as reflected by his tax returns. In light of our highly deferential stance regarding jury determinations of damages, we cannot say that there was no evidence presented to support a jury finding of future lost wages in the amount of $150,000.

Concerning the evidence of future medical expenses, there is no doubt that physician testimony and Mr. Bitler's testimony did not establish precise costs of any future procedures. One physician testifying, Dr. Hartford, described past problems with infections involving Mr. Bitler's skin grafts, and acknowledged a possibility of future infections. Mr. Bitler's plastic surgeon, Dr. Gordon, testified to the future need for procedures to develop Mr. Bitler's fingernails, which Bitler has elected to defer to a later time. (3 R. at 768.) Plaintiff argues that the jury could reasonably estimate future medical expenses based on the stipulation by the parties to past medical expenses. Clearly, such a basis for determining an award for future medical expenses is imprecise and on review is not based on specific and substantial evidence. But we do not review for substantial evidence; rather, we review for clear error whether there is any evidence to support the jury finding. Despite some estimation in the jury's award for future medical expenses, we cannot conclude, in light of our deferential review, that there is no evidence to support the award or that it was clearly erroneous.

Therefore, as to the jury awards for future wage loss and future medical expenses, we affirm.

VI

With regard to the final issue in White-Rodgers' appeal, appellant argues that the jury award of $25,000 for Mrs. Bitler's physical and emotional injury was excessive. Specifically, White-Rodgers argues that negligent infliction of emotional harm was not pled, and because Mrs. Bitler suffered only minor physical injuries in the accident, that the jury award is clearly excessive. We disagree. As appellant concedes, Mrs. Bitler may recover emotional injuries that flow from her own physical injuries. *See, e.g., Williams v. Continental Airlines, Inc.*, 943 P.2d 10, 16 (Colo. App. 1996). Because the circumstance surrounding her admittedly minor physical injury to her knee when the force of the explosion in

the basement forced her off the sofa and onto the floor is itself quite traumatic, we cannot conclude that the jury had no basis for finding the emotional injury associated with her own experience of, and physical injuries from, the explosion—quite apart from the emotional trauma of seeing the injuries sustained by her husband—are grossly excessive. Accordingly, as to the jury's damage award for Mrs. Bitler's negligence claim, we affirm.

VII

For the reasons set forth above, we **AFFIRM**.

APPENDIX B

FILED
United States District Court
Denver, Colorado
MAR 03 2000
JAMES R. MANSPEAKER
Clerk

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO
Judge Edward W. Nottingham

Civil Action No. 98 N 1897

FRED D. BITLER, PEGGY A. BITLER, and COLORADO COMPENSATION INSURANCE AUTHORITY, a political subdivision of the State of Colorado,

Plaintiffs,

v.

A.O. SMITH CORP, a foreign corporation, WHITE ROGERS, a subsidiary of EMERSON ELECTRIC CO., a foreign corporation, and NATIONAL PROPANE CORP., formally, ALL SEASONS PROPANE, a Colorado corporation,

Defendants.

ORDER AND MEMORANDUM OF DECISION

This is a personal-injury case. Plaintiff Fred Bitler was injured in a liquid-propane explosion allegedly caused by a defective hot water heater. Plaintiffs bring claims for (1) negligence, (2) strict products liability, and (3) negligent misrepresentation against Defendants A.O. Smith Corp., White Rogers, a subdivision of Emerson Electric Co. (collectively "White-Rodgers"), and National Propane Corp. ("National Propane") for their respective roles in the design, manufacture, installation, and servicing of plaintiff's hot water heater. This matter is before the court on: (1) "Defendants A.O. Smith Corp. and White-Rodgers Division, Emerson Electric Co.'s Motion for Summary Judgement" filed on July 2, 1999; and (2) National Propane's Motion for Summary Judgment" filed on July 6, 1999. Jurisdiction is based on 28 U.S.C.A. § 1332 (West 1993 & Supp. 1999).

FACTS

1. The Accident

On the evening of July 25, 1996, Fred Bitler returned home from work and discovered a lack of hot water while taking a shower. (Defs. A.O. Smith and White-Rodgers Division, Emerson Electric Co.'s Am. Mem. of Law in Supp. of Its Mot. for Summ. J., Factual and Procedural Background ¶ 1 [filed July 7, 1999] [hereinafter "Def. White-Rodgers' Br."]; *admitted at* Pls.' Resp. to Defs. A.O. Smith and White-Rodgers Division, Emerson Electric Co.'s Mot. for Summ. J. and Am. Mem. of Law, Resp. to Statement of Undisputed Facts ¶ 1 [filed Aug. 16, 1999] [hereinafter "Pl.'s Resp. to Def. White-Rodgers' Br."].) Mr. Bitler went to the basement where the water heater was located to see what the problem was. (*Id.*, Factual and Procedural Background 11; *admitted*

at Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 11.) As he opened the basement door, he smelled gas. (*Id.*, Factual and Procedural Background 11; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 11.) Mr. Bitler then went to shut off the gas flow and started down the basement stairs. (*Id.*, Factual and Procedural Background ¶ 1; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts ¶ 1.) Mr. Bitler was about three-fourths of the way down the stairs when a liquid-propane explosion occurred, seriously injuring him.[1] (*Id.*, Factual and Procedural Background 11; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 11.)

The Bitler basement consisted of two small rooms with field stone walls connected by a doorway. (*Id.*, Factual and Procedural Background 12; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 12.) The water heater was located in the northwest comer of the north room, next to a cylindrical propane gas space heater. (*Id.*, Factual and Procedural Background 13; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 13.) The gas line that

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[1] At the time of the accident Mr. Bitler worked at the Oldland Brothers Ranch in Meeker, Colorado, as a ranch hand. As part of his employment, Oldland Brothers provided housing for Mr. Bitler and his wife. It is undisputed that at the time of the accident Mr. Bitler was acting within the scope and course of his employment and covered by a valid worker's compensation policy issued by Colorado Compensation Insurance Company ("CCIA"). Consequently, CCIA's interest in this litigation entails pursuing its subrogation rights for the payment it has made on Mr. Bitler's claim.

supplied propane to both the water heater and the space heater, which consisted of unsupported, flexible copper tubing, ran along the basement ceiling joints. (*Id.*, Factual and Procedural Background ¶ 3; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts ¶ 3.) Above the water heater, the gas line had a "T" fitting, with one branch running to the water heater control, and the other branch running to the space heater. (*Id.*, Factual and Procedural Background 13; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 13.) In addition to the propane appliances in the basement, the Bitler home contained three other propane appliances located on the first floor: a cook stove in the kitchen, a furnace in the living room, and a space heater in one of the bedrooms. (*Id.*, Factual and Procedural Background 14; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 14.)

2. The Defendants

a. White-Rodgers Defendants

A.O. Smith manufactured the water heater that was installed in the Bitler's basement. (Preliminary Pretrial Order, Stipulations ¶ 2 [filed July 12, 1999].) White-Rodgers manufactured the model 3772U water heater gas control ("White-Rodgers gas control") that was incorporated into the Bitler's hot water heater in 1979. (*Id.*, Stipulations ¶ 3.) The White-Rodgers gas control regulates the flow of gas to the pilot and main burner. (Def. White-Rodgers' Br., Factual and Procedural Background 16; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 16.) The primary function of the White-Rodgers gas control is to shut off all gas flow to the pilot and main burner if the pilot is extinguished. (*Id.*, Factual and Procedural Background 17; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 17.) A user lights the pilot by turning the White-Rodgers gas control

to "pilot" and pushing down. (*Id.*, Factual and Procedural Background 18; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts ¶ 8.) This drives the reset shaft down and opens the safety valve, thus permitting gas to flow to the pilot. (*Id.*, Factual and Procedural Background 18; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 18.) Once the user lights the pilot, the user holds down the White-Rodgers gas control knob for about one minute, during which time the pilot flame heats the "thermocoupler." (*Id.*, Factual and Procedural Background ¶ 8; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts ¶ 8.) The heated thermocoupler generates an electrical current which, in turn, energizes a magnet that holds the safety valve open. (*Id.*, Factual and Procedural Background 18; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 18.) If a magnetic seal is established, the pilot will remain lit after the White-Rodgers gas control knob is released and the reset shaft ascends. (*Id.*, Factual and Procedural Background ¶ 8; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts ¶ 8.) The user then turns the White-Rodgers gas control to the "on" position and gas flows past the safety valve to the main valve. (*Id.*, Factual and Procedural Background 18; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 18.) As long as the pilot burns, the safety valve will stay open and allow gas to flow through to the main burner when there is a demand for heat. (*Id.*, Factual and Procedural Background 17; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 17.) If the pilot goes out, the thermocoupler cools and the electric current de-energizes, allowing the safety valve to release. (*Id.*, Factual and Procedural Background 18; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts ¶ 8.) When operating properly, the safety

valve will snap shut, prohibiting the flow of gas to the pilot. (*Id.*, Factual and Procedural Background 18; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 18.) As part of its manufacturing process, White-Rodgers tests every gas control to ensure that the safety valve closes properly. (*Id.*, Factual and Procedural Background 16; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 16.)

The White-Rodgers gas control at issue here contained a fine-mesh inlet screen to prevent debris and sediment in the gas stream from reaching the gas control's safety valve and affecting its operations.[2] (*Id.*, Factual and Procedural Background 19; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 19.) Although plaintiffs concede that the design purpose of the mesh screen is to prevent debris from reaching the safety valve, the parties dispute its efficacy. Plaintiffs believe that the screen is ineffective in preventing debris, especially copper sulphide, from bypassing the screen and contaminating the safety valve so that it will not close properly. (Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 19.) In 1980, subsequent to the installation of the Bitler's control, White-Rodgers modified the design of its water heater gas controls by adding a deflection baffle to aid in the prevention of debris reaching the control mechanism. (*Id.*, Resp. to Statement of Undisputed Facts 19.)

The problem of contamination of gas control safety valves like the ones White-Rodgers' manufactures is not a

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[2] White-Rodgers began installing inlet screen on all of its gas control valves in 1979. Prior to this time, gas control valves were unscreened.

new problem within the gas control industry. As early as 1967, White-Rodgers was aware that copper sulphide and other contaminants could cause automatic safety valves to fail. (Pls.' Resp. to Def. White-Rodgers' Br., Pls.' Additional Disputed Facts 11; *admitted in part at* Defs. A.O. Smith Corporation and White-Rodgers Division, Emerson Electric Co.'s Reply to Pls.' Opp'n to Mot. for Summ. J., Defs.' Resp. to Pls.' Statement of Facts ¶ 1 [filed Aug. 30, 1999] [hereinafter "Def. White-Rodgers' Reply"].) In March 1982, Emerson Electric's Vice President Jon Cicy made a presentation to the National LP Gas Association in which he acknowledged that a major cause of accidents is particle contamination such as copper sulphide. (*Id.*, Additional Disputed Facts 13; *admitted in pertinent part* at Def. White-Rodgers' Reply, Resp. to Pls.' Statement of Facts 13.)

b. National Propane

National Propane sold and installed the water heating system located in the Bitler's home on the Oldland Brothers Ranch. (Notice of Removal, Attach. [Compl. and Jury Demand ¶ 30 (filed in Denver County District Court on Aug. 14, 1998)]; *admitted at* Answer of Def. National Propane Corp. ¶ 30 [filed Sept. 17, 1998].) On March 26, 1991, Dennis Deines, an employee of National Propane, performed a "leak repair" on the Bitler's hot water heater. (Preliminary Pretrial Order, Stipulations ¶ 6 [filed July 12, 1999].) On July 12, 1991, Deines returned to the Bitler home and performed a safety inspection of the gas system and appliances, including the hot water heater. (*Id.*, Stipulations 17.) During his safety inspection, Deines cycled the White-Rodgers control and noted that the safety valve functioned properly. (Def. White-Rodgers' Br., Factual and Procedural Background 15; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 15.)

3. Post Accident Testing

On July 31, 1996, the Oldland Brothers' property insurer retained Elden Boh to conduct an investigation into the cause and origin of the explosion that injured Mr. Bitler. (*Id.*, Factual and Procedural Background ¶ 10; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 110.) As part of his investigation, Boh tested the Bitler's gas system and found two leaks—one in the bedroom space heater and another in the "T" connection in the piping near the basement ceiling. (*Id.*, Factual and Procedural Background ¶ 10; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts ¶ 10.) Boh, however, did not test the White-Rodgers gas control to determine if it leaked. (Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 110.) On August 25, 1996, Boh removed the water heater from the Bitler basement, but in the process dropped the water heater down the basement stairs, breaking the gas inlet piping. (Def. White-Rodgers' Br., Factual and Procedural Background ¶ 11; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts ¶ 11.) Although plaintiffs contend that the inlet piping could still be tested after Boh dropped the water heater, neither party tested the inlet piping. (*Id.*, Factual and Procedural Background ¶ 11; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts ¶ 11.)

On December 6, 1996, the parties examined and tested the White-Rodgers gas control. (*Id.*, Factual and Procedural Background ¶ 12; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 112.) The White-Rodgers gas control performed properly in every test conducted by the parties. (*Id.*, Factual and Procedural Background 112; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts ¶ 12.) In one test, the safety valve magnet was energized to

simulate a lit pilot light, and then the power was interrupted to replicate a pilot outage. (*Id.*, Factual and Procedural Background ¶ 13; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts ¶ 13.) It is undisputed that the safety valve operated properly, fully closing to prevent any gas flow. (*Id.*, Factual and Procedural Background 113; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 113.) Despite these undisputed results, plaintiffs take issue with the testing methods and contend that White-Rodgers has previously admitted that in similar cases involving known contaminated safety valves, post-accident testing did not reveal any leaks. (Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts ¶ 8.)

On June 23, 1998, White-Rodgers' Director of Product of Safety, Kevin Kyle, disassembled the White-Rodgers' gas control in the presence of plaintiffs' expert Donald Sommer. (*Id.*, Factual and Procedural Background 114; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 114.) The results of the disassembly and the conclusions drawn therefrom are hotly contested. Disassembly revealed that the inlet screen was in place and that there was particle debris both upstream and downstream of the inlet screen. (*Id.*, Factual and Procedural Background 114; *admitted at* Pls.' Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts 114.) The exact amount of debris downstream and its significance is subject to debate. Kyle claims that he observed only some very fine particles at the base of the safety valve power unit and that there was no visible accumulation of debris on the safety valve seat. (*Id.*, Factual and Procedural Background 114) Sommers, on the other hand, claims that there were contaminate particles downstream of not only the screen, but also the safety shut-off valve, and the valve seat plunger, and that there was debris on the central area of the seal. (Pls.'

Resp. to Def. White-Rodgers' Br., Resp. to Statement of Undisputed Facts ¶ 14.)

On April 15, 1999, plaintiffs disclosed Donald Summer, Troy Bowman, W. Alan Bullerdiek, Thomas Crane, Elden Boh, and William Kelner as their expert witnesses. As a result of examining the Bitler's basement and the White-Rodgers' gas control, and based upon their own experience and knowledge, plaintiffs' experts surmised that the gas stream flowing to the Bitler's hot water heater carries copper sulphide particles that bypassed the inlet screen and lodged on the safety valve, thereby preventing the safety valve from fully closing when the pilot light went out. The failure of the safety valve to close properly, in turn, caused a gas leak that was ignited when Mr. Bitler entered the basement. Plaintiffs' experts also theorized that the particles that caused the gas leak were dislodged from the safety valve seat after the explosion by (1) the force of the explosion, (2) some unknown person manipulating the control knob after the incident, or (3) Boh's dropping of the water heater down the basement stairs.

4. Procedural History

On August 14, 1998, plaintiffs filed their complaint in Denver County District Court, asserting claims for: (1) strict products liability against White-Rodgers with respect to the design of the White-Rodgers's gas control valve and White-Rodgers' failure to warn consumers of the dangers associated with its gas control valve; (2) negligent product design against White-Rodgers; (3) negligence against National Propane; (4) negligent misrepresentation against all defendants; and (5) loss of consortium against all defendants. (Notice of Removal, Attach. [Compl. and Jury Demand ¶¶ 20-40 (filed in Denver County District Court on Aug. 14, 1998)].) On September 2, 1998, defendants removed the action to this court, pursuant to 28 U.S.C.A. § 1441 (West 1994). (*Id.*) On July 2 and July 6, 1999, White-Rodgers and

National Propane, respectively, moved for summary judgment. (Defs. A.O. Smith Corp. and White-Rodgers Division, Emerson Electric Co.'s Mot. for Summ. J. [filed July 2, 1999]; National Propane's Mot. for Summ. J. [filed July 6, 1999].) Both White-Rodgers and National Propane argue that plaintiffs' experts opinions regarding the cause of the explosion that injured Mr. Bitler are inadmissible under rule 702 of the Federal Rules of Evidence and the Supreme Court's ruling in *Daubert v. Merrill Dow Pharms., Inc.*, 509 U.S. 579, 113 S. Ct. 2768 (1993). (Def. White-Rodgers' Br. at 16-26; National Propane's Br. in Supp. of Its Motion for Summ. J. at 6-16 [filed July 6, 1999] [hereinafter "Def. National Propane's Br."].) White-Rodgers and National Propane argue that without these expert opinions, plaintiffs cannot put forth sufficient evidence to establish a genuine issue of material fact with respect to every essential element of their claims as to which they have the burden of proof at trial. (Def. White-Rodgers' Br. at 27; Def. National Propane's Br. at 16.)

ANALYSIS

1. Legal Standard

Pursuant to rule 56(c) of the Federal Rules of Civil Procedure, the court may grant summary judgment where "the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and the . . . moving party is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(c); *see Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 250, 106 S. Ct. 2505, 2511 (1986); *Concrete Works, Inc. v. City & County of Denver*, 36 F.3d 1513, 1517 (10th Cir. 1994). The moving party bears the initial burden of showing an absence of evidence to support the nonmoving party's case. *Celotex Corp.*, 477 U.S. at 325, 106 S. Ct. at 2554. "Once the moving party meets this burden, the burden shifts to the nonmoving party to demonstrate a genuine issue

for trial on a material matter." *Concrete Works, Inc.*, 36 F.3d at 1518 (citing *Celotex Corp.*, 477 U.S. at 325, 106 S. Ct. at 2554). The nonmoving party may not rest solely on the allegations in the pleadings, but must instead designate "specific facts showing that there is a genuine issue for trial." *Celotex Corp.*, 477 U.S. at 324, 106 S. Ct. at 2553; *see* Fed. R. Civ. P. 56(e). The court may consider only admissible evidence when ruling on a summary judgment motion. *See World of Sleep, Inc. v. La-Z-Boy Chair Co.*, 756 F.2d 1467, 1474 (10th Cir. 1985). The factual record must be viewed in the light most favorable to the nonmoving party. *Concrete Works, Inc.*, 36 F.3d at 1518 (citing *Applied Genetics Int'l, Inc. v. First Affiliated Sec., Inc.*, 912 F.2d 1238, 1241 [10th Cir. 1990]).

2. Admissibility of Plaintiffs' Expert Witnesses' Testimony

Because this a diversity case and the injury occurred in Colorado, Colorado law governs plaintiffs' state-law tort claims against defendants. *Erie v. Tompkins*, 304 U.S. 64, 58 S. Ct. 817 (1938). Plaintiffs assert a claim for strict products liability against White-Rodgers. (Notice of Removal, Attach. [Compl. and Jury Demand ¶¶ 25-28 (filed in Denver County District Court on Aug. 14, 1998)].) In order to recover on a theory of strict products liability, a plaintiff must establish that: (1) the product is in a defective condition unreasonably dangerous to the user or consumer; (2) the product is expected to and does reach the consumer without substantial change in the condition in which it was sold; (3) the defect caused the plaintiff's injuries; (4) the defendant sold the product and is engaged in the business of selling products; and (5) the plaintiff sustained damages. *Barton v. Adams Rental, Inc.*, 938 P.2d 532, 536-37 (Colo. 1997) (citations omitted). Plaintiffs also assert negligence claims against White-Rodgers and National Propane. (Notice of Removal, Attach. [Compl. and Jury Demand ¶¶ 20-24, 29-33 (filed in Denver County District Court on Aug. 14, 1998)].) To

establish a prima facie case for negligence, regardless of the specific negligence theory, Colorado law requires a plaintiff to establish: (1) the existence of a legal duty owed by the defendant to the plaintiff; (2) breach of that duty; and (3) a sufficient causal relationship between the defendant's breach and the plaintiffs injuries. *Martinez v. Lewis*, 969 P.2d 213, 217 (Colo. 1998). White-Rodgers and National Propane contend that they are entitled to summary judgment because plaintiffs' experts' testimony is inadmissible under rule 702 of the Federal Rules of Evidence, and, thus, plaintiffs' cannot establish the causation element in either of these claims.[3]

Although I apply Colorado substantive law to plaintiffs' tort claims, federal law controls questions concerning foundation for expert testimony. *Orth v. Emerson Elec. Co., White-Rodgers Div.*, 980 F.2d 632, 636 (10th Cir. 1992). Rule 702 of the Federal Rules of Evidence governs the admissibility of scientific and technical expert testimony. Rule 702 requires a determination that the proffered expert testimony (1) is based on scientific or technical knowledge, and (2) will assist the trier of fact to understand the evidence or determine a fact in issue.[4] Fed. R. Evid. 702. In *Daubert*, the Supreme Court set forth parameters for analyzing the admissibility of scientific evidence. *Daubert*, 509 U.S. at

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[3] Because White-Rodgers and National Propane raise the same arguments with respect to the admissibility of plaintiffs' expert witnesses' testimony, I address their motions together.

[4] In full, rule 702 provides "[i]f scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise." Fed. R. Evid. 702.

589-96, 113 S. Ct. at 2795-99. *Daubert*, in essence, requires the district court to conduct an evidentiary "gate-keeping" inquiry to determine whether an expert's proffered testimony pertaining to scientific knowledge is reliable. This requires "a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and whether it can be properly applied to the facts in issue." *Id.* at 592-93, 113 S. Ct. at 2797. The second requirement of rule 702—that the evidence be helpful to the trier of fact—is primarily a question of relevance. *Id.* at 590, 113 S. Ct. at 2795 ("Expert testimony which does not relate to any issue in the case is not relevant and, ergo, non-helpful.") (internal quotations and citations omitted).

To guide courts in this heady task, the *Daubert* court set forth several factors that a district court should consider in assessing the admissibility of scientific evidence: (1) whether the technique can and has been tested; (2) whether the technique has been subjected to peer review; (3) the known potential error rate of the technique; (4) the existence and maintenance of standards controlling the technique's operation; and (5) whether the technique has gained general acceptance in the scientific community.[5] *Id.* at 593-95, 113 S. Ct. at 2797-98. *Daubert* makes clear, however, that these factors do not represent "a definitive checklist or test." *Id.* at 593, 113 S. Ct. 2786. Rather, this list is non-exhaustive and "the inquiry envisioned by Rule 702 is . . . a flexible one." *Id.* at 594, 113 S. Ct. at 2797; *accord Kumho Tire Co. v. Carmichael*, 119 S. Ct. 1167, 1175 (1999) ("[W]e conclude

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[5] Although *Daubert* only addressed the issue of admissibility scientific evidence, the Supreme Court recently decided that the *Daubert* inquiry also extends to "technical or other specialized knowledge." *See Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 119 S. Ct. 1167, 1175 (1999).

that the trial judge must have considerable leeway in deciding in a particular case how to go about determining whether particular expert testimony is reliable. That is to say, a trial court should consider the specific factors identified in *Daubert* where they are reasonable measures of the reliability of expert testimony.") With these principles in mind, I now address the admissibility of the expert testimony proffered by plaintiffs.

a. Eldon Boh

i. Qualifications

Eldon Boh is a former fire fighter for both the Cherry Hills and Denver Fire Departments. (Attachs. to Mem. Br. and Resp. to Defendants' [sic] White-Rodgers and Emerson Electric's Mot. for Summ. J., Ex. 16 [Curriculum Vitae of Eldon Boh] [filed Aug. 16, 1999] [hereinafter "Pls.' Attachs. to Resp. to Def. White-Rodgers' Br."].) He has nearly thirty-years experience in fire investigation and has investigated approximately 2200 fires in eleven states. (*Id.*, Ex. 16 [Curriculum Vitae of Eldon Boh].) Boh's investigations include occurrences of fires in residential as well as commercial properties, and fires that were accidental or incendiary in nature. (*Id.*, Ex. 16 [Curriculum Vitae of Eldon Boh].) Boh has testified numerous times in various state and federal courts in the areas of fire cause and origin and products liability. (*Id.*, Ex. 16 [Curriculum Vitae of Eldon Boh].) In addition, he has attended numerous fire science technology courses, lectured extensive to the Denver Police and Fire Departments and other organizations, and is a member of several local and national professional associations dealing with fire investigation. (*Id.*, Ex. 16 [Curriculum Vitae of Eldon Boh].)

ii. Boh's Opinion

Boh's proffered testimony concerns the cause and origin of the explosion that injured Mr. Bitler. It is Boh's opinion

that the cause of the explosion was the ignition of propane gas leaking from the White-Rodgers gas control. (*Id.*, Ex. 13 [Boh Dep. at 230], Ex. 14 [Boh Supplemental Report].) Boh also opines that the source of the ignition was the electrical wiring that ran along the ceiling of the Bitler's basement. (*Id.*, Ex. 13 [Boh Dep. at 230].) The methodology that Boh employed was his personal observation and training as a fire investigator. On this basis, he concluded that the White-Rodgers gas control was the source of the propane leak because of the elimination of other sources of ignition. (*Id.*, Ex. 13 [Boh Dep. at 231].) Boh testified that he eliminated the upstairs appliances primarily because they were not in the area of origin. (*Id.*, Ex. 13 [Boh Dep. at 231].) He also eliminated the space heater, the only other propane appliance in the basement, because it was not "on" and the nature of the explosion permitted a conclusion that the source of the explosion was at the hot water heater. (*Id.*, Ex. 13 [Boh Dep. at 231].)

According to Boh, the flash and scorch patterns and the fact that the explosion pushed up the living room floor suggested that there was a large accumulation of propane gas in the basement and that the most likely source of the gas leak was a failure of the White-Rodgers gas control. (*Id.*, Ex. 13 [Boh Dep. at 231].)

iii. Discussion and Conclusion

Although it is not entirely clear from their briefs, it appears that defendants raise two objections to Boh's proffered testimony. First, defendants argue that Boh's testimony should be excluded because Boh did not test the White-Rodgers gas control, nor does he know what specific malfunction or condition caused the gas control to leak. (Def. White-Rodgers' Br. at 9, 19, 21.) Second, defendants appear to argue that, because Boh cannot eliminate the loose "T" fitting or a loose fitting at the piping inlet to the gas

control, his opinion is unreliable.[6] (*Id.* at 9; Def. National Propane's Br. at 8.) I am unpersuaded by either argument.

To begin with, I find that Boh employed a sound methodology in reaching his conclusion, based on his personal experience and training as a fire investigator as well as his observations of the physical evidence present in the Bitler's basement. Also, Boh's inability to determine the specific malfunction in the White-Rodgers gas control is not fatal to the admissibility of his opinion. As plaintiffs state in their response brief, each of plaintiffs' experts present only a portion of plaintiffs' liability theory and none of the experts presents the whole theory. (Pls.' Resp. to Def. White-Rodgers' Br. at 18.) Nowhere in the Federal Rules of Evidence is there a requirement that a single expert witness opine on every scientific fact needed to establish a party's causation or liability theory. Thus, while standing alone,

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[6] National Propane also stresses the fact that, when Boh first observed the water heater after the explosion, the gas control was in the "off" position. (National Propane Br. at 8.) National Propane maintains that this undercuts plaintiffs' causation theory because, in the "off" position, gas from the main line would not have gotten into the White-Rodgers gas control. (*Id.*) Although I agree that this fact undercuts plaintiffs theory, I do not find it to be dispositive. Boh states that during his inspection he noticed numerous matches at the base of the water heater and the magnitude of the pressure release of the explosion suggests that the most probable source of the gas leak was the White-Rodgers gas control. (Pls.' Attachs. to Resp. to Def. White-Rodgers' Br., Ex. 18 [Boh Supplemental Report].) The presence of matches near the hot water heater supports an inference that there have been problems with the pilot light and lends credence to plaintiffs' contention that someone turned the gas control off following the explosion.

Boh's testimony falls short of establishing plaintiffs' causation theory (and surviving summary judgment) his testimony is not inadmissible under rule 702 or *Daubert* simply because he cannot identify the exact failure in the White-Rodgers gas control. This is a task left for plaintiffs' other experts.

In addition, defendants' argument that Boh's testimony may be unreliable because Boh's inspection revealed a leak in the "T" fitting in the piping near the basement ceiling does not render his opinion inadmissible. The goal of rule 702 is reliability, not absolute certainty.[7] *Orth*, 980 F.2d at 637 (citing *Jones v. Otis Elevator Co.*, 861 F.2d 655, 663 [11th Cir. 1988] ["[A]s long as a logical basis exists for an experts opinion ... the weaknesses in the underpinnings of the opinion [] go to the weight and not the admissibility of the testimony."]) (further citations omitted); *Werth v. Makita Elec. Works, Ltd.*, 950 F.2d 643, 651 (10th Cir. 1991) (holding that expert's theory that defect in circular saw caused accident was admissible because it was based on "clear probability" even thought expert could not identify which of three factual scenarios actually occurred). Moreover, this argument merely challenges Boh's conclusions—an argument in favor of inadmissibility for which *Daubert* offers defendants no support. *Daubert*, 509

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[7] Boh testified that he believes that the force of the explosion caused the "T" fitting to leak. (Aff. of Thomas Klosowski in Supp. of Mot. for Summ. J., Ex. H [Boh Dep. at 271] [filed July 2, 1999] [hereinafter "Klosowski Aff."].) Boh maintains, that based on his observation of the Bitler basement after the explosion, the force of explosion moved along the basement ceiling and because the "T" fitting was not properly supported, the explosive force caused the "T" fitting to bend, which, in turn, caused the fitting to leak. (*Id.*, Ex. H [Boh Dep. at 254, 271].)

U.S. at 595, 113 S. Ct. at 2797 ("The focus, of course [of a rule 702 inquiry], must be solely on the principles and methodology, not on the conclusions they generate.")

In sum, then, I conclude that Boh's opinion is reliable and would assist the trier of fact in determining the origin of the gas leak that precipitated the explosion that injured Mr. Bitler. Accordingly, Boh's testimony satisfies the admissibility standards set forth in rule 702.

b. Donald Sommer

i. Qualifications

Donald Sommer graduated from the University of Michigan with a bachelor of science degree in mechanical engineering. (Pls.' Attachs. to Resp. to Def. White-Rodgers' Br., Ex. 19 [Curriculum Vitae of Donald Sommer]) He has done graduate work in the fields of instrumentation, testing systems, and cryogenics. (*Id.*, Ex. 19 [Curriculum Vitae of Donald Sommer]) Presently, Sommer is the owner and president of Aerospace, Inc., a company involved in forensic engineering, computer modeling, and failure analysis of airframes, engines, and aircraft systems. (*Id.*, Ex. 19 [Curriculum Vitae of Donald Sommer]) Sommer has engineering experience in mechanical systems design and failure analysis and accident reconstruction. (*Id.*, Ex. 19 [Curriculum Vitae of Donald Sommer]) Also, prior to his involvement in the present case, Sommer has been asked to express his opinion regarding the efficacy of screens and filters in their ability to prevent contaminants from reaching sensitive components in engines and hydraulic systems. (*Id.*, Ex. 14 [Sommer Dep. at 32].)

ii. Sommer's Opinion

Sommer's opinion goes to the heart of plaintiffs' case. Sommer opines that the explosion in the Bitler basement occurred when propane gas ignited after leaking from the White-Rodgers gas control. (*Id.*, Ex. 20 [Donald Sommer

Rule 26 Expert Report]) Specifically, Sommer opines that the leakage in the White-Rodgers gas control was caused by sediment and debris, suspected to be copper sulphide deposits, lodging on the automatic shut-off safety valve sealing surface. (*Id.*, Ex. 20 [Donald Sommer Rule 26 Expert Report at 3).) Sommer believes that the copper sulphide particles bypassed the inlet screen, entered the control, and accumulated on safety valve seat. (*Id.*, Ex. 20 [Donald Sommer Rule 26 Expert Report].) According to Sommer, the inlet screen was improperly designed, allowing particles to pass underneath and around the edges of the screen. (*Id.*, Ex. 14 [Sommer Dep. at 47].) Sommer also believes that the lubricating grease used in the White-Rodgers gas control accumulated on the safety valve seat which helped adhere the copper sulphide particles to the safety valve. (*Id.*, Ex. 14 [Sommer Dep. at 47].)

iii. Discussion and Conclusion

Defendants object to Sommer's proffered testimony (as well as plaintiffs remaining experts) on the grounds that plaintiffs' "phantom particle" theory is unabashed speculation. (Def. White-Rodgers' Br. at 19-20.) Defendants maintain that plaintiffs' theory fails to comply with *Daubert* because it is not based on scientific reasoning or methodology and, therefore, will not assist the jury in determining the cause of the Bitler explosion. (*Id.* at 21-26; Def. National Propane's Br. at 6-16.) Specifically, defendants object to plaintiffs' theory because Sommer did not conduct any controlled laboratory tests on the White-Rodgers gas control safety valve or inlet screen to validate plaintiffs' theory.[8] (*Id.* at 21-25.) Defendants maintain that

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[8] Specifically, defendants assert that plaintiffs failed to conduct any testing to determine: (1) the size of an obstruction in the

[Footnote continued on next page]

there are too many analytical gaps in plaintiffs' theory and it is built on too many untested assumptions that contradict known facts. (Def. National Propane's Br. at 10-11.) Defendants assert that the lack of any published studies or treatises that support plaintiffs' theory further demonstrates that plaintiffs' theory is not scientifically sound. (*Id.* at 10; Def. White-Rodgers' Br. at 25.) Simply put, defendants argue that plaintiffs' causation theory is the type of "junk science" that the *Daubert* gate-keeping function is designed to keep out of the courtroom. (Def. White-Rodgers' Br. at 25.)

I disagree. Defendants place too much emphasis on a mechanical application of the *Daubert* factors. As the Supreme Court has held, the *Daubert* factors do not represent a single talismanic inquiry fixed for all time. *See, e.g.*,

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[Footnote continued from previous page]

safety valve needed to cause a leak; (2) how great an accumulation of copper sulphide is necessary to cause a leak; (3) the rate of flow for a gas leak if the safety valve was not fully closed; (4) the ability of a debris to bypass the inlet screen; (5) the force of the safety valve spring when it closes; (6) the ability of copper sulphide to withstand the force of the safety valve spring when it closes; and (7) whether the trauma of an explosion could dislodge particles previously seated on the safety valve. (Def. White-Rodgers Br. at 21-24.) In his supplemental expert report Alan Bullerdiek provided data regarding the leakage rate of gas if the safety valve did not seal properly. Bullerdiek calculated that, if the safety valve was unseated .007 inches (the width of a strip of 35 mm film), gas would leak at a rate of fifty-eight cubic feet per hour; a smaller opening obviously provide less flow. (Pls.' Attachs. to Resp. to Def. White-Rodgers' Br., Ex. 27 [Supplemental Rule 26 Report of Alan Bullerdiek].)

Kumho Tire Co., 119 S. Ct. at 1175 ("We agree . . . that the factors identified in *Daubert* may or may not be pertinent in assessing reliability, depending on the nature of the issue, the expert's particular expertise, and the subject of his testimony.") (internal quotations omitted); *Id.* at 1179 (Scalia, J., concurring) ("[A]s the Court makes clear today, the *Daubert* factors are not holy writ . . . ."). *Daubert* simply requires that "proposed expert testimony must be supported by 'appropriate validation—*i.e.*, "good grounds," based on what is known.'" *Mitchell v. Gencorp, Inc.*, 165 F.3d 778, 781 (10th Cir. 1999) (citing *Daubert*, 509 U.S. at 590, 113 S. Ct. at 2786). A plaintiff need not prove that the expert is undisputedly correct. *Id.* at 781 (citations omitted). As the Third Circuit recently stated: "[t]he test of admissibility [under *Daubert*] is not whether a particular scientific [or technical] opinion has the best foundation, or even whether the opinion is supported by the best methodology or unassailable research. Rather the test is whether the particular opinion is based on valid reasoning and reliable methodology." *In re TMI Litig.*, 193 F.3d 613, 665 (3d Cir. 1999) (citations and internal quotations marks omitted); *accord Mitchell* 165 F.3d at 781-82 ("[T]he plaintiff must show that the method employed in reaching the conclusion is scientifically sound and that the opinion is based on facts which sufficiently satisfy Rule 702's reliability requirement.") (citing *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 744 [3d Cir. 1994]).

The Supreme Court's concern in *Daubert* and *Kumho* was with the "new" science and novel theories that have not been tested or accepted within their relevant scientific and technical fields.[9] Here, however, the causation theory

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[9] In *Daubert*, the plaintiffs' children were born with serious birth defects allegedly caused by the mother's ingestion of

[Footnote continued on next page]

plaintiffs espouse is far from novel. To the contrary, the record demonstrates that the problem of contamination of gas control safety valves by particles such as copper sulphide has been known and accepted within the gas control industry for many years. The only arguably novel element of plaintiffs' theory is that this explosion occurred in a White-Rodgers gas control that contained an inlet screen, whereas the majority of previous explosions involved unscreened gas controls.[10]

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Bendectin during her pregnancy. Plaintiffs sought to introduce expert testimony that contradicted the then-existing generally accepted theory that Bendectin is not capable of causing malformations in fetuses. The experts based their conclusions not on human studies, but on: (1) "in vitro" (test tube) and "in vivo" (live) animal studies that found a link between Bendectin and malformations; (2) pharmacological studies of the chemical structure of Bendectin that purported to show similarities between the structure of the drug and that of other substances known to cause birth defects; and (3) the "reanalysis" of previously published epidemiological studies. *Daubert*, 509 U.S. at 583, 113 S. Ct. at 2791. In *Kumho*, the Court wrestled with how to determine the reliability of expert testimony from an engineer who sought to conclude that a manufacturer's defect in a tire caused a blow-out. The Court affirmed the exclusion of the expert's testimony because it involved specific and rather novel theories not generally employed by other tire experts. *Kumho Tire Co.*, 119 S. Ct. at 1178-79.

[10] White-Rodgers vigorously maintains that the evidence which plaintiffs produce concerning accidents involving unscreened gas controls is irrelevant to the instant motion. (Def. White-Rodgers' Reply at 3-4.) I disagree. There is no evidence in the record that the design of the safety valve itself in the unscreened gas controls

[Footnote continued on next page]

With respect to this issue, however, Sommer opines that the inlet screen installed in the Bitler's gas control was "loose and ineffective" and that "black particles had bypassed the screen and entered the control valve." (Pls.' Attachs. to Resp. to Def. White-Rodgers' Br., Ex. 20 [Donald Sommer Rule 26 Expert Report].) To validate his opinion, Sommer compared the inlet screen to White-Rodgers design specifications and concluded that the inlet screen did not conform to the design requirements.[11] (*Id.*, Ex. 26 [Supplemental Rule 26 Aff. of Donald Sommer Re: Resp. to Defs.' Mot. for Summ. J. 117 (hereinafter "Sommer Aff.")].) Specifically, Sommer noted that the inlet screen was not inserted at the correct angle called for in the design specifications and this incorrect angle resulted in irregular edges which allowed debris to circumvent the edges of the

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differs from the safety valve in screened gas controls. Therefore, because plaintiffs have come forth with evidence that suggests the screen was ineffective, the evidence of copper sulphide contamination in unscreened gas controls becomes relevant to the disposition of White-Rodgers' instant motion.

[11] White-Rodgers objects to Sommer's supplemental report on the grounds that it introduces new opinions and argues that it should be stricken for violating the scheduling order. (Def. White-Rodgers' Reply at 6-7.) After comparing Sommer's original opinions with his supplemental report, I do not find that Sommer has offered any "new" opinions that were not contained in his initial expert report. I do find, however, that Sommer's inclusion of electromicroscopic photography violates Magistrate Judge Schlatter's order denying plaintiffs' motion to add a metallurgist as a rebuttal expert witness. (Courtroom Mins. [filed July 6, 1999].) Accordingly, plaintiffs electro-microscopic evidence is stricken.

inlet screen. (*Id.*, Ex. 26 [Sommer Aff. 117].) Sommer also states that the inlet screen is approximately .016 inches wide and the slot in which the inlet screen fits is.100 inches wide. (*Id.*, Ex. 26 [Sommer Aff. 116].) Sommer maintains that the result of placing a thin screen in a wide slot creates a passageway for particles substantially larger than the size of the mesh contained in the inlet screen. (*Id.*, Ex. 26 [Sommer Aff. ¶¶ 8, 15, 18].) Sommer's opinion is further buttressed by White-Rodgers' own expert, Rudolph Lambert, who testified that, while checking the effectiveness of the White-Rodgers inlet screens in 1980, he discovered some minor migration of copper sulphide particles around the edges of the inlet screen. (*Id.*, Ex. 12 [Lambert Dep. at 126-27].)

Also, I find that Sommer employed a sufficiently sound methodology in reaching his conclusion. Unlike *Daubert* and *Kumho*, the analytical methodology used by Sommer is based on the application of well-established principles of physics, mathematics, and design engineering. (*Id.*, Ex. 26 [Sommer Aff. 116-7 (explaining how the laws of physics apply to move copper sulphide through the Bitler's gas line)].) There can be no serious doubt that these principles are not generally accepted within the scientific and engineering community. Additionally, there are facts in the record that support the reliability of Sommer's methodology and conclusions derived therefrom. For example, disassembly of the White-Rodgers gas control revealed debris downstream of the inlet screen. Likewise, Sommer states that he observed debris on the safety shut-off valve, the valve seat plunger, and that grease and debris were on the safety shut-off valve seat. Moreover, because Sommer's methodology is sound, his failure to conduct independent testing of the White-Rodgers gas control does not render his testimony inadmissible. *See Orth*, 980 F.2d at 636 (holding that failure to test gas control installed in furnace did not render expert's testimony inadmissible as a matter of law); *Werth*, 950 F.2d at 650-51 (reaffirming view that "otherwise

relevant, factually related expert opinion evidence could support a products liability claim despite the fact that the expert did not conduct independent tests"); *Patterson v. Conopco, Inc.*, 999 F. Supp. 1417, 1420 (D. Kan. 1998) (holding that expert's failure to conduct independent testing goes to the weight the trier of fact should accord the expert's opinion and not to its admissibility) (citations omitted).[12]

Finally, because defendants rely so heavily on it, a few words need to be said about *Stibbs v. Mapco, Inc.*, 945 F. Supp. 1220 (S.D. Iowa 1996).[13] After reviewing the

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[12] *Orth* involved an gas explosion allegedly caused the failure of a White-Rodgers gas control safety valve installed on a furnace. *Orth*, 980 F.2d at 634. In their lawsuit against White-Rodgers, the plaintiffs' expert theorized that the White-Rodgers gas control safety valve did not close fully because it was contaminated with debris. *Id.* at 635-36. The Tenth Circuit rejected White-Rodgers' claim that the experts testimony should have been excluded at trial because the expert did not conduct testing on the safety valve to verify his theory. *Id.* at 636-37. The court reasoned that the hypothetical nature of the plaintiffs' expert notwithstanding, his theory had a logical and scientific basis based on the circumstantial evidence adduced following the explosion. *Id.* Although *Orth* was decided pre-*Daubert*, and thus not dispositive, I find that the Tenth Circuit's reasoning still has some persuasive value.

[13] Like the instant case, *Stibbs* involved a gas explosion allegedly caused by a White-Rodgers gas control safety valve that did not operate properly. *Id.* at 1221. The *Stibbs* plaintiffs' causation theory was similar in many respects to that proffered by plaintiffs here. *Id.* at 1223. Judge Vietor excluded the plaintiffs' expert testimony under *Daubert* because he found that the experts failed to test certain aspects of their theory which undermined their

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Stibbs opinion, I find that, for the purposes of a *Daubert* inquiry, it is distinguishable. For example, the only physical evidence that supported the *Stibbs* plaintiffs' hypothesis was: (1) the presence of a mark on the White-Rodgers gas control safety valve; and (2) the absence of a leak in any other part of the plaintiffs' gas system. *Id.* at 1223. Here, in contrast, Sommer has testified that he observed debris downstream of the White-Rodgers gas control inlet screen and on several parts of the safety valve. Further, the *Stibbs* theory of causation was less refined than that offered in this case. Of particular importance to the *Stibbs* court was the experts' inability to state the origin of the particles that allegedly cause the gas leak or explain how, if the particles came through the gas line, they could have bypassed the inlet screen. *Id.* at 1224. Again, in contrast, Sommer has offered testimony and conducted research into plaintiffs' theory that the inlet screen was inadequate to prevent debris from circumventing the inlet screen. Moreover, it does not appear that the *Stibbs* court had before it the same amount of evidence regarding the gas industry's general acceptance of the theory that gas control safety valves are subject to particle contamination which could render them inoperable. Thus, while this court is cognizant of Sommer's (and plaintiffs' other experts') inability to explain certain facts—most notably the fact that the White-Rodgers gas control worked properly after the explosion—these are issues that go to weight of Sommer's testimony and not its admissibility. *See Daubert*, 509 U.S. at. 596, 113 S. Ct. at 2798 ("Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional

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conclusions to such an extent that they were inadmissible. *Id.* at 1223-25.

and appropriate means of attacking shaky but admissible evidence.")

Based on the foregoing, I conclude that Sommer's application of well-established engineering principles to the physical evidence he observed in his investigation of the White-Rodgers gas control provides a sufficiently reliable basis for his opinion. Contrary to defendants' assertions, Sommer is not "expounding on novel scientific evidence, but [] [is] taking known facts, together with his experience and knowledge of causation factors, and drawing a rational conclusion as to causation." *Orth*, 980 F.2d at 636. Any shortcomings in Sommer's opinion and his inability to explain conflicting evidence may certainly affect the weight the jury chooses to give to his opinion, but it does not bar its admission. I further conclude that, because a jury would not have Sommer's knowledge of the behavior of propane gas and design of the White-Rodgers gas control, his opinion will assist the jury in determining a fact in issue. Therefore, because the opinions of Boh and Sommer pass muster under rule 702, summary judgment is inappropriate because a genuine issue of material fact exists concerning causation. Accordingly, White-Rodgers and National Propane's motions for summary judgment are denied with respect to plaintiffs' claims for strict products liability and negligence.[14] Furthermore, because I conclude that

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[14] In its motion for summary judgment, White-Rodgers requests in the alternative that the court appoint an expert pursuant to rule 706 of the Federal Rules of Evidence or a special master pursuant to rule 53 of the Federal Rules of Civil Procedure to aid the court in determining the causation issues in this case. While the court appreciates White-Rodgers' concern, I believe that this court is more than competent to assess the causation issues raised in this case without outside help. Accordingly, these requests are denied.

summary judgment is inappropriate, I need not consider plaintiffs' remaining experts at this stage of the proceedings.

3. Negligent Misrepresentation

In addition to their negligence and strict products liability claims, plaintiffs assert a negligent misrepresentation claim against White-Rodgers and National Propane. (*See* Notice of Removal, Attach. [Compl. and Jury Demand ¶¶ 34-38 (filed in Denver County District Court on Aug. 14, 1998)].) Colorado law has incorporated the tort of negligent misrepresentation as defined in section 311 of the Restatement (Second) of Torts. *Bloskas v. Murray*, 646 P.2d 907, 914 (Colo. 1982); *CJI-Civ. 4th* 9:3A (1999). The Restatement provides that:

> One who negligently gives false information to another is subject to liability for physical harm caused by action taken by the other in reasonable reliance upon such information, where such harm results (a) to the other, or (b) to such third persons as the actor should expect to be put in peril by the action taken.

Restatement (Second) of Torts § 311(1) (1965).

White-Rodgers argues that it is entitled to summary judgment because plaintiffs have not presented any evidence to support their claim of negligent misrepresentation. (Def. White-Rodgers' Br. at 16.) I agree. Plaintiffs did not even address this argument in their response brief, and my review of the record does not reveal any evidence of White-Rodgers supplying false information concerning its gas control. Thus, while there is a factual issue as to whether the White-Rodgers gas control is defective and unreasonably dangerous or whether White-Rodgers negligently designed and manufactures its gas control, there is no evidence in the record from which a reasonable jury could conclude that White-Rodgers negligently supplied false information

concerning the safety of its gas control. Accordingly, White-Rodgers is entitled to summary judgment with respect to plaintiffs' negligent misrepresentation claim.[15]

4. Conclusion

Based on the foregoing, it is therefore

ORDERED as follows:

1. White-Rodgers' motion for summary judgment (#32) is GRANTED in part and DENIED in part. White-Rodgers' motion for summary judgment is GRANTED with respect to plaintiffs' claim for negligent misrepresentation. It is DENIED in all other respects.

2. National Propane's motion for summary judgment (#35) is DENIED.

3. National Propane's motion for leave to file a reply brief in support of its motion for summary judgment (#56) is DENIED as moot.

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[15] In contrast to White-Rodgers, National Propane did not specifically move for summary judgment with respect to plaintiffs' negligent misrepresentation claim. Because Nation Propane, as the moving party, has failed to carry its initial burden under rule 56(c) of the Federal Rules of Civil Procedure of showing "an absence of evidence to support the nonmoving party's [claim]," National Propane is not entitled to summary judgment on plaintiffs' negligent misrepresentation claim. *Celotex Corp.*, 477 U.S. at 325, 106 S. Ct. at 2554.

Dated this 3 day of March, 2000.

BY THE COURT:

/s/
EDWARD W. NOTTINGHAM
United States District Judge

APPENDIX C

UNITED STATES COURT OF APPEALS

TENTH CIRCUIT

FRED D. BITLER; PEGGY A. BITLER; COLORADO COMPENSATION INSURANCE AUTHORITY, a political subdivision of the State of Colorado,

Plaintiffs – Appellees,

v.

A.O. SMITH CORPORATION, a foreign corporation; NATIONAL PROPANE CORP., formerly known as All Seasons Propane, a Colorado corporation,

Defendants,

and

WHITE RODGERS, a subsidiary of EMERSON ELECTRIC CORP., a foreign corporation,

Defendant – Appellant.

No. 02-1527

ORDER
Filed February 9, 2005

Before **LUCERO, McKAY** and **HARTZ,** Circuit Judges.

Appellant's petition for rehearing is granted for the purpose of clarifying our language. The revised opinion is attached.

The petition for rehearing en banc was transmitted to all of the judges of the court who are in regular service as required by Fed. R. App. P. 35. As no member of the panel and no judge in regular active service on the court requested that the court be polled, that petition is denied.

Entered for the Court
Patrick Fisher, Clerk

By: /s/
Deputy Clerk

Supreme Court, U.S.
FILED
JUN 8 - 2005
OFFICE OF THE CLERK

No. 04-1485

In The Supreme Court of the United States

WHITE-RODGERS,
A DIVISION OF EMERSON ELECTRIC COMPANY,

Petitioner,

v.

FRED D. BITLER, ET AL.,

Respondents.

On Petition For Writ Of Certiorari To The United States Court Of Appeals For The Tenth Circuit

RESPONDENTS' BRIEF IN OPPOSITION

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QUESTION PRESENTED

Is it necessarily abuse of discretion for a Federal Judge to allow distinguished experts to provide reasonable and reliable testimony, in accord with their skills, training and experience, as to the existence of a generally accepted defect in a propane gas hot water heater control, without conducting unhelpful testing of component parts altered by an explosion and subsequent events?

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RESPONDENTS FRED D. BITLER AND PEGGY L. BITLER'S BRIEF IN OPPOSITION TO WHITE-RODGERS' PETITION FOR WRIT OF CERTIORARI

I. STATEMENT OF THE CASE

This case, properly decided unanimously by more than a dozen federal judges, in at least six separate stages, is a fact-bound case that doesn't involve a significant issue of federal law or a circuit split. In addition to its rampant hyperbole, Petitioner's brief generally mischaracterizes the expert testimony presented at trial in this matter. Respondents take issue with this wholesale mischaracterization as more fully discussed below. Petitioner and Respondents disagree on nearly every important issue concerning the skills, training, experience and investigations of Respondents' experts. To date, all such issues have been resolved in Respondents' favor. Petitioner now asks this Court to intervene and hold that the jury and more than a dozen federal judges to review this case each erred.

Fred and Peggy Bitler resided in a house on the Oldland Ranch outside of Meeker, Colorado, where Fred Bitler was employed as a ranch hand. (Pet. App. 3a) On the evening of July 25, 1996, Mr. Bitler discovered that there was no hot water when he attempted to shower. (*Id.*) The Bitlers' hot water was supplied by a liquid propane hot water heater located in the basement. (*Id.*) Mr. Bitler proceeded to the basement, and when he had walked approximately two-thirds of the way down the staircase, he was hit by the force of a large explosion from the basement. (*Id.*) Mr. Bitler's wife, Peggy Bitler, who was upstairs, was thrown off of a sofa onto the floor which was later determined to have been raised several inches by the force of the explosion from below. (*Id.*) Mr. Bitler sustained

severe injuries including extensive burns (requiring multiple painful surgeries), general disfigurement, and inability to regulate his body temperature, that rendered him unable to work as a cowboy and ranch hand. (*Id.*)

Petitioner, White-Rodgers, a subdivision of Emerson Electric Company, manufactured the subject gas control on the Bitlers' hot water heater. (Pet. App. 4a) The gas control is intended to regulate the flow of LP gas to the pilot and main burner of the home water heater, and it is intended to stop the flow of gas if the pilot light is extinguished. (*Id.*) It is well established and known that copper sulfide particles may become lodged on the safety valve seat in Petitioner's gas controls, preventing the valve from sealing and causing a propane gas leak. (*Id.*) This precise problem has led to several leaks and explosions. In 1978, at the behest of the Consumer Product Safety Commission, White-Rodgers attempted to modify the design of its safety valve. (*Id.*) Despite these attempts, the problems of copper sulphide contamination persisted.

Prior to trial, the Bitlers hired several experts to testify on their behalf. The background, experience and education of these experts and the substance of their testimony, is detailed below. Contrary to Petitioners assertion, Respondents have never suggested, nor have their experts suggested, that there existed "one particle" of copper sulfide that lodged open the safety valve. Rather, the evidence at trial demonstrated that copper sulfide particles of all sizes combined with excess grease on the subject safety valve to form a paste that held the valve open. At trial, the Bitlers established that copper sulfide contamination existed on the safety valve seat of the subject valve before, during, and after the subject explosion. Respondents proved the existence of copper sulfide

contamination on the safety valve seat through the testimony of experts who saw the contamination with their own eyes after opening the valve; and from photographic evidence (SEM and EDAX) that confirmed the existence of copper sulfide contamination on the safety valve seat. Numerous photographs of copper sulfide contamination located downstream of the screen in the subject valve were admitted into evidence. (*See, e.g.*, Aplee. Supp. App. at 156-157) Respondents provided expert testimony that the copper sulfide contamination could and did lodge open the safety valve seat sufficient to cause the leak in question, which resulted in the explosion. Respondents provided documentary evidence of copper sulfide contamination and expert testimony from several experts displaying precisely how the subject explosion occurred.

Petitioner wrongly contends that, "[T]here is no evidence that any of the tiny particles found inside the control were large enough to have prevented the safety valve from shutting properly when the pilot light extinguished." (Pet., p. 5) Respondents' expert Donald Sommer, measured one of the pieces of copper sulfide and testified that it was 85 micrometers in size. (Aplt. App. at 1335) Allan Bullerdiek, another of Respondents' experts, testified that a sulfide particle as small as a human hair (70 micrometers) can lodge the safety valve seat open enough to cause a gas leak sufficient to cause the explosion. (Aplt. App. at 2497) The Court and the jury relied on photographs, measurements, physical observation and expert testimony. There was ample physical evidence supported by expert testimony that had been subjected to a gatekeeping function at the trial court. Close examination of the Petition for a writ of certiorari betrays Petitioner's continuing quest to reargue the facts.

Respondents theory, largely ignored in the Petition, was that particulate contamination (copper sulfide) mixed with grease on the safety valve seat, and lodged open the valve. (Aplt. App. at 1251) Grease and particulate contamination were located on, around, upstream and downstream of the safety valve, all of which was well documented by photos admitted into evidence (Aplt. App. at 1220, Aplee. Supp. App. at 159).

District Judge Nottingham noted that there was testimony of observed debris downstream of the inlet screen. (Aplt. App. at 266) Judge Nottingham also noted that Mr. Sommer conducted research and offered testimony as to the inadequacy of the screen. (Aplt. App. at 267) Voluminous evidence was admitted at trial concerning the general acceptance that gas control safety valves may become inoperable and dangerous when subject to sulfide particulate contamination, and may cause an explosion. (Aplt. App. at 267) In an effort to keep the evidence from the jury, Petitioner offered at trial to stipulate that sulfide particulate contamination has caused intermittent valve leaks, precisely what Petitioner now refers to before this Court as "junk science" (Aplt. App. at 1910).

Petitioner's contention that there was no basis for Respondents' experts' conclusion that copper sulfides and other contaminants passed through the sides of the screen causing the explosion ignores several relevant and crucial facts established at trial. Petitioner acknowledges that explosions are a known cause of sulfide particles cracking, breaking and falling off safety valve seats. (Aplt. App. at 1286) Petitioner ignores that in addition to other contaminants found on the safety valve seat, an inordinate amount of lubrication (grease) was found on the safety

valve seat itself. (Aplt. App. at 1251) As the evidence established at trial, the presence of grease betrayed a manufacturing defect since this lubricant was not supposed to be placed on the safety valve seat. (Aplt. App. at 1243)

Because there is no circuit split, and because Petitioner has mischaracterized the nature and character of Respondents' expert testimony at trial, Respondents are compelled to set forth each of their experts, their skills, training and experience, and the substance of their testimony.

Expert Testimony

A. Eldon Boh

Mr. Boh graduated from high school in 1964, and obtained an Associates Degree in Fire Science Technology. He received training through the Denver Fire Department Southern Bureau. In addition, he attended fire training programs across the country at institutions including Northwestern University and Rutgers University, and he attended several classes through the National Fire Protection Association. He served in the United States Navy from 1964 to 1969. Mr. Boh joined the Englewood Fire Department in April of 1969.

By the time of the subject explosion, Mr. Boh had spent 25 years applying fire science technologies, and was a member of the National Fire and Fraud Investigators Association, the International Association of Arson Investigators, and the founder of the Colorado International Association of Arson Investigators. In 25 years as an

investigator, Mr. Boh has investigated approximately 2500 fires, including the MGM Grand Hotel fire in Las Vegas, the Stapleton Tank Farm explosion, the Crested Butte State Bank explosion, the University Hills Shopping Center fire and the Citadel Shopping Center fire in Colorado Springs.

Mr. Boh was hired by Colorado Farm Bureau, the insurer of the ranch property, to do a cause and origin investigation into the fire and explosion that occurred at the Oldland Ranch. Mr. Boh has expressed his opinion to a reasonable degree of scientific certainty that the White-Rodgers gas control failed, causing the explosion. Mr. Boh eliminated all sources of gas except the water heater. The nature of the explosion suggested that it originated from the hot water heater and, most likely, the gas control. Mr. Boh followed the most commonly followed procedure, eliminating other ignition sources and working from lesser areas of damage to areas with greater damage in order to determine cause and origin.

B. Donald Sommer

Mr. Sommer is a graduate engineer with a degree from the University of Michigan College of Engineering, and owner of Aeroscope, Inc. Aeroscope deals in engineering analysis relating primarily to accidents and mishaps. Mr. Sommer graduated from high school in 1964 and entered the Albion College School of Math and Sciences. He attended Albion College for two years before moving to the University of Michigan College of Engineering, where he completed three additional years. Mr. Sommer's graduate work dealt with testing instrumentation systems and cryogenics, studying low temperature gasses and working

on research projects for NASA. As an engineering student, he studied physics, math, sciences, fluid dynamics, thermodynamics, stress analysis, materials analysis, engineering testing, engineering report writing, and graduate mechanical engineering. In his advanced coursework, Mr. Sommer studied engineering, physics and advanced sciences related to failure analysis.

In addition to being an engineer, Mr. Sommer is an aircraft accident investigator and professional pilot. He is also an airframe and power plant mechanic. Prior to testifying in this case, Mr. Sommer investigated a number of other explosions and fires. Most notably, Mr. Sommer worked on the team that investigated the fire and explosion that occurred on TWA Flight 800 off Long Island, New York. In addition, he investigated several LP gas explosions.

Mr. Sommer brought his education, training and experience to the investigation of this explosion. Mr. Sommer examined all potential causes of the subject explosion. Mr. Sommer and his staff looked at reports and analyses done by others in this case, examined the Bitlers' residence on two occasions, took various pieces of equipment involved in the gas system of the house and analyzed those pieces of equipment to determine if there was a defect present that was related to the explosion in the Bitlers' house. Mr. Sommer testified that it was obvious that the injuries to Mr. Bitler and the damage to the Bitler residence were caused by a propane gas explosion in the lower level of the house.

Mr. Sommer reviewed investigative reports by the Fire District, the Meeker Volunteer Fire Department and the Sheriff's Department. Mr. Sommer reviewed a significant

number of photographs relating to the case and took several photographs himself. Mr. Sommer testified that the explosion created a hard concussive action that broke a door, a door handle, blew the window out of the door, left the upstairs living room in extreme disarray with chairs knocked over, and the floor of the living room lifted up exposing the floor joists beneath.

Mr. Sommer classified the subject explosion as an extremely concussive, powerful and destructive explosion. Mr. Sommer testified that the concussive force in the basement was sufficient to break the studding of the wall and actually move the drywall several feet away from the wall. Mr. Sommer testified that various objects were blown from the basement into the stairwell. After receiving a number of pieces of hardware taken from the Bitlers' hot water heater, Mr. Sommer scheduled a teardown inspection of those pieces. Petitioner had a representative present at this inspection. The parties agreed as to a single protocol for the inspection. When the parties dissembled the gas control, the covering gasket was removed and the inlet screen was left in place in its chamber in the control valve. Mr. Sommer testified at trial that there was significant debris located on both sides of the inlet screen. Mr. Sommer measured the dimensions of the channel in which the screen fit and measured it to be .13 or .14 inches in diameter; however, the screen is made of 1/64-inch steel. Mr. Sommer measured the screen and analyzed it for conformity with engineering drawings. Mr. Sommer concluded that the measurements of the screen did not comply with the engineering drawings. The screen was not long enough to meet the specifications of the drawings. The height of the subject screen was actually .0042 of an inch larger than called for in the engineering drawings.

The most significant anomaly that Mr. Sommer identified in the subject accident screen was the fact that the mesh did not line up properly as called for in the engineering drawings, allowing the mesh to fray and wear and allowing the migration of particulate contamination. This phenomenon led to ragged edges in the subject accident screen and gaps for particulate migration.

Mr. Sommer observed that the channel for the subject screen was .053 inches longer than the length of the screen. Mr. Sommer noted that while a baffle was present in the engineering drawings, no baffle existed inside the subject accident control. Mr. Sommer testified that the missing baffle would have been important because it would change the energy of the gas flow path in such a way as to direct particulate contamination away from the screen, and that the baffle serves the important secondary function of securing in the subject screen. Mr. Sommer testified that without the baffle, the screen was allowed to move about freely and was not contained in the channel. Mr. Sommer testified that the channel in the casting was large enough to accommodate both the screen and a baffle, although no baffle was present. Mr. Sommer testified that the channel was approximately twelve times the width of the screen.

Mr. Sommer testified at trial that it was not individual particles that held the safety valve open, but a combination of grease and sulfide particles that created a gum holding open the safety valve. Mr. Sommer testified that an exemplar sulfide particle taken from the safety valve seat measured 85 micrometers. Mr. Sommer also testified that White-Rodgers manufactured the subject accident valve with the screen, but no baffle, for a year and a half. During that time, Petitioner did nothing to give notice to

owners, consumers, or gas companies about problems associated with the screen-only valves.

Mr. Sommer testified at trial that the subject safety valve seat had a significant amount of grease that mixed with copper sulfide particulate contamination. Mr. Sommer used a scanning electron microscope and electron dispersive x-rays to determine that the particulate contamination was copper sulfide. Mr. Sommer testified that he observed a mixture of copper sulfide particles and grease on the safety valve seat, and based upon his review of the engineering drawings, grease should not be present on the safety valve seat. Mr. Sommer testified at trial that the subject particulate contamination mixed with grease and caused the safety valve to leak. Mr. Sommer also testified that the leak in the heat connection in the Bitlers' basement was caused by the concussive force of the explosion in conjunction with a bad flare fitting at that peak connection.

Mr. Sommer accounted for the fact that the subject control did not leak after the accident by noting that the subject control was altered at least twice from its pre-accident setting and condition. Mr. Sommer noted that in turning the gas control gas cock knob to the "off" position, the safety valve seats and turns. After the explosion, the gas cock knob was turned to the "off" position, and the pre-explosion condition of the safety valve seat was altered. Mr. Sommer also testified that he obtained White-Rodgers' documentation and the testimony of White-Rodgers' expert, Mr. Lambert, that copper sulfide contaminated control valves are prone to intermittent leaks.

C. W. Alan Bullerdiek

Mr. Bullerdiek has a degree in chemical engineering from Kansas State University, and has investigated fires and explosions during a professional career spanning more than twenty years. Mr. Bullerdiek ran a scientific testing laboratory that performed contract work for the United States Government, including the Federal Railroad Administration, State of New York, and Consumer Products Safety Commission. The laboratory work included performing failure modes and effects analyses of appliances. Mr. Bullerdiek was the principal investigator and principal author of the Cal Span Report admitted into evidence at trial.

Mr. Bullerdiek testified about manufacturers' duty to warn the Consumer Products Safety Commission regarding potential hazards of returned devices. Mr. Bullerdiek testified about the history of copper sulfide particulate contamination in propane appliances. Mr. Bullerdiek further testified that the Gas Appliance Manufacturers Association, as well as the Petitioner, were aware of the problems associated with copper sulfide contamination. Mr. Bullerdiek testified that there was a significant amount of particulate contamination downstream from the screen in the subject accident safety valve.

Mr. Bullerdiek testified without objection that the debris was able to circumvent the screen and that in the subject control, the channel failed to secure the screen. Mr. Bullerdiek testified that based on his education, training and experience, the amount of contamination on the subject safety valve seat was not acceptable in that the

subject safety valve seat had grease contamination and that the sticky grease captured copper sulfide particles, analogizing it to mortar and a little stone wall.

Mr. Bullerdiek testified that one of the reasons that the safety valve can cause an explosion from particulate contamination is that the safety valve seat loses its compliance, and that a result of this phenomenon is that a particle no thicker than a human hair (70 micrometers) is large enough to permit a sufficient amount of gas into the periphery of the safety valve, causing an explosion. Mr. Bullerdiek testified that the subject safety valve seat had lost a significant amount of its compliance. Mr. Bullerdiek also testified that intermittent leaking is common in safety valves which have been in explosions. The reasons for the intermittent leaking according to Mr. Bullerdiek are the disturbance of the valve during and after the explosion, the process of shutting off the safety valve, and additional disturbances. Mr. Bullerdiek testified to a reasonable degree of scientific probability that the subject gas control was defective and unreasonably dangerous.

D. William Kelner

Mr. Kelner had owned gas company and acted as a trainer and consultant in the propane gas industry. Mr. Kelner worked in the gas industry for thirty years. In 1973, Mr. Kelner assumed the position of Superintendent of Standards and Practices at the Pennsylvania Gas and Water Company.

In 1988, Mr. Kelner testified that the propane industry had meetings with control manufacturers and it was decided that sediment traps would be mandatory. Mr. Kelner also testified that copper sulfide contamination on

a safety valve seat would prevent the safety valve from closing properly. At trial, Mr. Kelner was asked by Respondents' counsel on direct examination whether he had an opinion to a reasonable degree of probability as to the cause of the gas leak in the subject explosion. The Court sustained an objection to Mr. Kelner's testifying as to causation on foundational grounds. Mr. Kelner did testify on direct that the gas control was susceptible to contamination because of lack of sediment trap. The Court later ruled that the defendants had opened the door to Mr. Kelner's testimony concerning causation.

II. ARGUMENT

A. This Court Should Not Grant Certiorari because there is no Important Issue of Federal Law at Stake; there is no Circuit Split; Petitioner's Issues of Law are Really Questions of Fact Already Properly Decided Below.

Petitioner has argued and reargued the facts of this case. The admissibility of the testimony of Respondents' Expert Testimony, their expert qualifications, and the facts which underlie their opinions, were considered by District Court Judge Nottingham in ruling on a Petitioner's motion for summary judgment. At that time Judge Nottingham considered the proffered testimony and determined that it satisfied *Daubert*,[1] *Kumho*[2] and Rule 702.[3] Respondents' experts were next challenged in

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[1] *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579 (1993).

[2] *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999).

[3] Federal Rule of Evidence 702.

pretrial motions in limine before Judge Boland,[4] who ruled the testimony was admissible. Petitioner again challenged Plaintiffs' experts at trial and again in post trial motions. At each stage of these proceedings, the trial testimony was deemed reasonable and reliable, and in conformance with *Daubert*, *Kumho* and Rule 702. Respondents' experts were next challenged by petitioner on appeal to the Court of Appeals for the Tenth Circuit, which unanimously ruled that the testimony at trial was admissible and proper. Petitioner's next challenge to Respondents' experts, their qualifications and the underlying facts occurred in the Tenth Circuit in a motion for rehearing en banc, where none of the eligible judges on the Tenth Circuit Court of Appeals called for a vote on rehearing.

1. There is no important issue of federal law at stake in this case.

This case does not involve a significant question of federal law. This Court has spoken as to the admissibility of expert witness testimony and there is no indication that the trial court abused its discretion in admitting the testimony at trial, or that the Tenth Circuit, in a unanimous decision ratified by declining en banc review, erred in finding the expert testimony admissible. The particular federal laws in question are Federal Rules of Evidence 401 and 702. (Pet., p. 1) Petitioner raises no compelling argument for any alteration by this Court of Federal Rule 401.

The remaining rule, Rule 702, was amended in December of 2000. Petitioner also makes no compelling argument for altering Federal Rule of Evidence 702. The

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[4] By agreement of the parties, the trial in the District Court was before Federal Magistrate Judge Boyd N. Boland.

courts below properly applied Rule 702. Accordingly, there is no significant issue of federal law at stake in this case.

2. No circuit split exists.

There is no split among the circuits on the issues raised in the Petition. *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579 (1993), and *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999) grants district judges broad discretion to admit or deny expert testimony. In light of this discretion, it is possible in the federal jurisprudence to pick at nuanced differences between various cases. However, in doing so, Petitioner fails to establish a genuine split of the circuits. A genuine conflict arises when it can be said with confidence that another court of appeals or state supreme court would reach an opposite result, based on a clear ruling in a very similar case. The most compelling evidence of a conflict is an overt expression of disagreement: "We reject the rule applied in the Ninth Circuit and accordingly exclude the proffered testimony." If a conflict is less direct, consisting of disagreement over general reasoning, different outcomes in differing circumstances, or divergent dicta, the conflict is not genuine. Such is the case here. In fact, the discretion provided to federal judges by *Daubert, Kumho*, and Rule 702 has been effective in preventing circuit splits. Since particular rulings on the admissibility of expert testimony are done on a highly individualized, case-by-case basis, in order for a circuit split to arise, another circuit court would have to hold that exact or very similar proffered testimony was inadmissible. *See, e.g., Reliable Evaluation of Expert Testimony*, 116 HVLR 2142 (May 2003). Petitioner cites no similar cases where very similar testimony has been excluded. Accordingly, the Petition for Writ of Certiorari should be denied.

B. The Case Below was Properly Decided and Should not be Disturbed.

1. Petitioner has argued precisely Respondents' theory of contamination in prior cases.

What Petitioner now claims to be "junk science" before this Court, it has argued as a scientific reality when its own purposes are best served. In *Tousigant v. Sears* and employee of Emerson Electric employees stated:

> Our tests indicate no leakage past the safety valve or thermostatic valve. There is copper sulfide in the control. We can only assume that the control leaked past the safety valve at one time due to the copper sulfide, as we can determine no other assignable cause . . .

(Aplee. Supp. App. at 13) In the case of *Maertens v. White-Rodgers*, Petitioner's own expert Rudolph Lambert examined a gas control and wrote in his report:

> The black foreign material noted on the inlet of the control and on the rubber surface of the safety valve has the appearance of copper sulfide. Copper sulfide is formed in copper gas lines by a reaction between copper and sulphur compounds in the gas. *While the safety valve did not leak when I tested it, the foreign material noted on the rubber surface of the safety valve and in the inlet of the thermostat, could have caused it to leak at one time, and caused a substantial discharge of unburned fuel if the water heater pilot became extinguished.* (Emphasis added)

(Aplee. Supp. App. at 14)

Despite the fact that when the valve was tested by Mr. Lambert a few minutes before he opened the control and it did not leak, Mr. Lambert concluded that copper sulfides were a probable cause of the leak which led to the *Maertens's* explosion.

a. Petitioner misstates the *Daubert* requirements.

No attempt has been made to "codify" the specific *Daubert* factors. *Daubert* itself emphasized that the factors were neither exclusive nor dispositive. Other cases have recognized that not all of the specific *Daubert* factors can apply to every type of expert testimony. In addition to *Kumho*, 119 S.Ct. at 1175, *see Tyus v. Urban Search Management*, 102 F.3d 256 (7th Cir. 1996) (noting that the factors mentioned by the Court in *Daubert* do not neatly apply to expert testimony from a sociologist). *See also Kannankeril v. Terminix Int'l, Inc.*, 128 F.3d 802, 809 (3d Cir. 1997).

Under *Daubert*, expert opinions must be based on facts that enable the expert to express a reasonably accurate conclusion, as opposed to conjecture or speculation. Absolute certainty is not required. Fed.Rules Evid.Rule 702, *Dodge v. Cotter Corp.*, 328 F.3d 1212 (10th Cir. 2003) In the instant case, each expert opinion admitted at trial was proffered by an individual whose credentials were not challenged on appeal. The opinions were based upon skills, training and experience and applied in a reasonable fashion to the facts of this case. *Daubert* requires nothing more.

The Tenth Circuit Court of Appeals held that Mr. Boh's examination of the scene and determination of the

likely cause of the explosion was not susceptible to testing or peer review. Notwithstanding, the Court held that based upon Mr. Boh's personal experience, training, method of observation, and deductive reasoning, it was sufficiently reliable to constitute a scientifically valid methodology. (Pet. App. 12a) With respect to Mr. Sommer, the Tenth Circuit started its analysis by examining the purposes for testing in *Daubert*. The Court determined that testing is necessary when an expert advances a theory that runs contrary to establish scientific principles, such as Copernicus' Falsification of Ptolomy's Theory of Movement of Celestial Bodies, (Pet. App. 13a) or in a recent Tenth Circuit example, the theory that wood could ignite at much lower temperatures than previously thought. *Truck Ins. Exch. v. MagneTek Inc.*, 360 F.3d 1206, 1211-1212 (10th Cir. 2004). In attempting to disprove established knowledge about regularly occurring phenomenon, testing is exceedingly important. However, in cases such as this, where experts rely upon experience in investigating fires, as well as established principles of mathematics, engineering, and physics, and the established principle that copper sulfide causes propane gas leaks, such testing is not required. (Pet. App. 13a).

That small particles of copper sulfide can combine with grease on the safety valve seat of a propane gas control and cause a leak and subsequent explosion, enjoys general acceptance in the scientific community. The Tenth Circuit noted Petitioner's misunderstanding of the important issue at stake in this case. Whether the particles and grease found on the safety valve seat caused the subject accident is a matter of the sufficiency of Respondents' evidence; i.e., whether the jury was convinced that Respondents' theory of causation was probable in this case.

This is a completely separate inquiry from whether the underlying theory is scientifically reliable. (Pet. App. 14a) Petitioner's confusion on these issues appears to be continuing, despite the Tenth Circuit's clarification. As that Court noted, the dispute as to whether copper sulfide and grease contamination on the safety valve seat caused the leak was properly a fact question for the jury. As the Tenth Circuit correctly noted, the experts' testimony fits the facts of this case and assists the jury in resolving a factual dispute. (Pet. App. 19a) Accordingly, the District Court performed its gate-keeping function by making a preliminary assessment of whether the reasoning or methodology underlying the testimony was scientifically valid and whether it could properly be applied to the facts at issue. (Pet. App. 19a) *Daubert* and its progeny require nothing more.

b. *Daubert* encourages Respondents' experts' methodology.

Respondents' expert testimony at trial satisfies *Daubert* and *Kumho*. *Kumho* did not restrict the ability of experts to testify, but rather re-stated the proposition that such testimony must be reliable and relevant. The court held that where "such testimony's factual basis, data, principles, methods, or their application are called *sufficiently* into question, . . . the trial judge must determine whether the testimony has 'a reliable basis in knowledge and experience of the [relevant] discipline.'" 119 S.Ct. at 1175 (quoting *Daubert*, 509 U.S. at 592, 113 S.Ct. 2786)

In addressing the issue of whether a trial court has the authority to consider the *Daubert* factors in determining the admissibility of a tire expert (i.e., engineer's)

testimony, the court "[e]mphasiz[ed] the word 'may.'" *Id.* at 1175. "Engineering testimony rests upon scientific foundations, the reliability of which will be at issue in *some* cases. . . . In other cases, the relevant reliability concerns may focus upon personal knowledge or experience." "[N]o one denies that an expert might draw a conclusion from a set of observations based on extensive and specialized experience." *Id.* at 1178. The Court cited with approval the Petitioners' contention that "*Daubert* was intended neither to be exhaustive nor to apply in every case." *Id.* at 1179. As explained by the Court:

> Our emphasis on the word "may" thus reflects *Daubert*'s description of the Rule 702 inquiry as "a flexible one." 509 U.S. at 594, 113 S.Ct. 2786. *Daubert* makes clear that the factors it mentions do *not* constitute a "definitive checklist or test." *Id.* at 593, 113 S.Ct. 2786. And *Daubert* adds that the gatekeeping inquiry must be "'tied to the facts'" of a particular "case." (Citations omitted) We agree . . . that "[t]he factors identified in *Daubert may or may not* be pertinent in assessing reliability, depending on the nature of the issue, the expert's particular expertise, and the subject of his testimony." . . . Too much depends upon the particular circumstances of the particular case at issue. *Id.* at 1175.

Petitioner also contends that Courts disfavor "differential diagnosis." In fact, courts have held that whether the expert has adequately accounted for obvious alternative explanations is an important part of determining whether such opinions are reliable. *See Claar v. Burlington N.R.R.*, 29 F.3d 499 (9th Cir. 1994) (testimony excluded where the expert failed to consider other obvious causes for the Respondent's condition). *Compare Ambrosini v.*

Labarraque, 101 F.3d 129 (D.C. Cir. 1996) (the possibility of some uneliminated causes presents a question of weight, so long as the most obvious causes have been considered and reasonably ruled out by the expert).

III. CONCLUSION

For the forgoing reasons, the Petition for a Writ of Certiorari should be denied.

Respectfully submitted,

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MOTION FILED
JUN 3 - 2005

(3)

No. 04-1485

IN THE
Supreme Court of the United States

WHITE-RODGERS,
A DIVISION OF EMERSON ELECTRIC COMPANY,
Petitioner,

v.

FRED D. BITLER, *ET AL.*,
Respondents.

On Petition for a Writ of Certiorari to the United States Court of Appeals for the Tenth Circuit

MOTION FOR LEAVE TO FILE *AMICI CURIAE* BRIEF AND BRIEF OF THE AMERICAN TORT REFORM ASSOCIATION AND NATIONAL ASSOCIATION OF MANUFACTURERS IN SUPPORT OF PETITIONER

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MOTION FOR LEAVE TO FILE *AMICI CURIAE* BRIEF OF THE AMERICAN TORT REFORM ASSOCIATION AND NATIONAL ASSOCIATION OF MANUFACTURERS IN SUPPORT OF PETITIONER

Pursuant to Rule 37.2(b), the American Tort Reform Association and National Association of Manufacturers request leave to file the accompanying brief as *amici curiae* in support of the Petition for a Writ of Certiorari. While the Petitioner has consented to the filing of this brief, Respondents' counsel have withheld consent, necessitating the filing of this

motion.[1]

Founded in 1986, the American Tort Reform Association (ATRA) is a broad-based coalition of more than 300 businesses, corporations, municipalities, associations, and professional firms that have pooled their resources to promote reform of the civil justice system with the goal of ensuring fairness, balance, and predictability in civil litigation. For more than a decade, ATRA has filed *amicus curiae* briefs in cases before this Court that have addressed important liability issues.

The National Association of Manufacturers (NAM) is the nation's largest industrial trade association, representing small and large manufacturers in every industrial sector and in all fifty states. The NAM's mission is to enhance the competitiveness of manufacturers and improve American living standards by shaping a legislative and regulatory environment conducive to U.S. economic growth and to increase understanding among policymakers, the media, and the general public about the importance of manufacturing to America's economic strength.

This case is of interest to *amici* because it provides a sound vehicle for this Court to address three key areas of division in the application of *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), and its progeny, *General Electric Co. v. Joiner*, 522 U.S. 136 (1997) and *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999). If the Tenth Circuit's ruling is allowed to stand, and other courts follow in this direction, then *Daubert* will be drained of its principal public policy purpose: to help assure that the trier of fact determines the truth in cases involving expert testimony. While some courts have adhered closely to *Daubert*'s

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[1] Petitioner's letter of consent has been lodged with the Clerk of the Court.

principles, others, such as the Tenth Circuit, have adopted an interpretation that (1) disregards the reliability of conclusions that do not flow from the facts of the case or the expert's analysis; (2) applies the minimal relevancy requirement favoring admission of ordinary evidence, rather than the heightened requirement that expert testimony "fit" the specific case; and (3) renders testing of scientific or technical theories wholly optional, even when such verification is readily available. The combination of the "wrong turn" on all three issues, which occurred in this case, substantially undermines *Daubert*'s gatekeeping process and truth-finding purpose.

Amici participated as *amici curiae* in both *Daubert* and *Kumho Tire* and have a strong interest in ensuring that the Court's rulings in those cases are not eviscerated.

For the foregoing reasons, the proposed *amici* are well-suited to bring these matters to the Court's attention. Accordingly, the American Tort Reform Association and National Association of Manufacturers respectfully request that the Court grant its motion for leave to file the attached brief.

Respectfully submitted,

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No. 04-1485

IN THE

Supreme Court of the United States

WHITE-RODGERS,
A DIVISION OF EMERSON ELECTRIC COMPANY,
Petitioner,

v.

FRED D. BITLER, *et al.*,
Respondents.

On Petition for a Writ of Certiorari to the United States Court of Appeals for the Tenth Circuit

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BRIEF OF *AMICI CURIAE* AMERICAN TORT REFORM ASSOCIATION AND NATIONAL ASSOCIATION OF MANUFACTURERS IN SUPPORT OF PETITIONER

INTEREST OF *AMICI CURIAE*[1]

Founded in 1986, the American Tort Reform Association (ATRA) is a broad-based coalition of more than 300 busi-

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[1] This motion for leave to file this brief *amici curiae* is filed simultaneously with the brief. No counsel for either party has authored this brief in whole or in part, and no person or entity, other than *amici*, their members, or their counsel, have made a monetary contribution to the preparation or submission of this brief.

nesses, corporations, municipalities, associations, and professional firms that have pooled their resources to promote reform of the civil justice system with the goal of ensuring fairness, balance, and predictability in civil litigation. For more than a decade, ATRA has filed *amicus curiae* briefs in cases before federal and state courts that have addressed important liability issues.

The National Association of Manufacturers (NAM) is the nation's largest industrial trade association, representing small and large manufacturers in every industrial sector and in all fifty states. The NAM's mission is to enhance the competitiveness of manufacturers and improve American living standards by shaping a legislative and regulatory environment conducive to U.S. economic growth and to increase understanding among policymakers, the media, and the general public about the importance of manufacturing to America's economic strength.

This case is of interest to *amici* because it provides a sound vehicle for this Court to address a unique combination of three key areas of division in the application of *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), and its progeny. If the Tenth Circuit's ruling is allowed to stand, and other courts follow in this clear direction 180 degrees away from *Daubert*, then the decision will be drained of its principal public policy purpose: to help assure that the trier of fact determines the truth in cases involving expert testimony.

Amici participated as *amici curiae* in both *Daubert* and *Kumho Tire* and have a strong interest in ensuring that the Court's rulings in those cases and subsequent ones are not eviscerated.

STATEMENT OF THE CASE

Amici adopt and incorporate Petitioner's statement.of the

case.

SUMMARY OF ARGUMENT

In *Daubert*, 509 U.S. at 589, the Court emphasized the obligation of the trial court to serve as a "gatekeeper," guarding the courthouse against untrustworthy expert testimony. The Court tasked district courts with screening proffered expert testimony to ensure that what is admitted "is not only relevant, but reliable." *Id.*

The Court should grant certiorari in this case to preserve both the letter and spirit of *Daubert*. It has been nearly fifteen years since the decision was rendered. As might be anticipated over such a significant period of time, key differences have arisen in its interpretation. This case presents the Court with a unique opportunity to provide guidance on not one or two, but three key areas of division:

First, may a court consider an expert's conclusions or must the court focus solely on the expert's methodology in determining reliability? Second, does *Daubert* require a heightened level of relevance beyond that ordinarily required by Federal Rule of Evidence 401? Third, does an expert's failure to test a theory, when readily verifiable through testing, render it unreliable and inadmissible?

If courts improperly interpret any one of these key areas, *Daubert* is drained of its meaning and purpose. A court's improper interpretation of all three, such as here, can and did render the *Daubert* truth-finding purpose meaningless.

The rulings of the Tenth Circuit in this case and other courts taking a similar approach threaten to diminish *Daubert's* principal public policy purpose: to help assure that the trier of fact determines the truth in cases involving expert testimony. While some courts have closely adhered to *Daubert*'s principles, others, such as the Tenth Circuit, have adopted an interpretation that (1) disregards the reliability of

conclusions that do not flow from the facts of the case or the expert's analysis; (2) applies the minimal relevancy requirement favoring admission of ordinary evidence, rather than the heightened requirement that expert testimony "fit" the specific case; and (3) renders testing of scientific or technical theories wholly optional, even when such verification is readily available. The combination of the "wrong turn" on all three issues, which occurred in this case, substantially undermines *Daubert*'s gatekeeping process and truth-finding purpose.

This Court has a strong interest in assuring that its sound public policy be preserved. For these reasons, the Petition for Writ of Certiorari should be granted.

ARGUMENT

I. THE LETTER, PURPOSE AND SPIRIT OF *DAUBERT*

Expert witnesses are given extraordinary privileges in court. Unlike lay witnesses, "an expert is permitted wide latitude to offer opinions, including those that are not based on firsthand knowledge or observation." *Daubert*, 509 U.S. at 592. Experts are unique in that their testimony may be based on evidence that otherwise would not be admissible. *See* Fed. R. Evid. 703. For example, experts are allowed to disclose hearsay and other evidence for the limited purpose of justifying their opinions, even if such information is inadmissible for its truth. *See Daubert*, 509 U.S. at 593; *see also Engebretsen v. Fairchild Aircraft Corp.*, 21 F.3d 721, 728-29 (6th Cir. 1994); *United States v. Sowards*, 339 F.2d 401, 402 (10th Cir. 1964). In addition, courts may permit expert witnesses to testify on the ultimate issue to be decided by the jury. *See* Fed. R. Evid. 704(a).

Expert testimony is, by definition, outside the realm of an ordinary juror's scope of knowledge. As this Court recognized in *Daubert*, "Expert evidence can be both powerful and quite misleading because of the difficulty in evaluating it." *Daubert*, 509 U.S. at 595 (quoting Jack B. Weinstein, *Rule 702 of the Federal Rules of Evidence is Sound; It Should Not be Amended*, 138 F.R.D. 631, 632 (1991)). It often addresses an "unfamiliar and esoteric field." *Tabatchnick v. G. D. Searle & Co.*, 67 F.R.D. 49, 55 (D.N.J. 1975). Moreover, "[e]vidence that purports to be based on science beyond the common knowledge of the average person that does not meet the judicial standard for scientific validity can mislead, confuse, and mystify the jury." *State v. O'Key*, 899 P.2d 663, 678 n.20 (Or. 1995). In addition to overwhelming the jury, and regardless of whether such testimony is labeled scientific or technical, "[t]here are a score of other concerns associated with experts who lack a reliable basis for their opinion, ranging from their introducing evidence that is otherwise inadmissible to prolonging litigation and wasting time and judicial resources." David L. Faigman et al., *How Good is Good Enough?, Expert Evidence Under Daubert and Kumho*, 50 Case W. Res. L. Rev. 645, 648-49 (2000).

For these reasons, the Court recognized in *Daubert*, and later in *General Electric Co. v. Joiner*, 522 U.S. 136 (1997) and *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999), that expert testimony must be subject to a strong and careful judicial gatekeeper function in order to protect a fundamental tenant of justice: finding the truth. As this Court has recognized, the gatekeeper function is not at odds with the jury system. It helps it function properly. The Court instructed district courts, in determining whether expert testimony is reliable, to consider whether a theory or technique has been tested; whether it has been subjected to peer review and publication; whether there is a significant potential rate of error; whether there are standards controlling the technique's op-

eration; and whether the theory or technique enjoys "general acceptance" within a "relevant scientific community." *Kumho Tire*, 526 U.S. at 149-50 (citing *Daubert*, 509 U.S. at 592-94). In providing these factors, the Court required district court judges to carefully screen expert testimony to ensure that it leads the jury to the truth. *Daubert* and its progeny "changed the deference-to-the-field approach . . . [and] brought a scientific culture to the courtroom." Faigman, *supra*, at 655-56.

Coinciding with the Court's decision in *Daubert* was the emergence of toxic torts and the burgeoning use of experts in civil litigation. *See, e.g.*, Joseph Sanders, *From Science to Evidence: The Testimony on Causation in the Bendectin Cases*, 46 Stan. L. Rev. 1, 31-32 (1993) (citing studies that found a 1500 percent rise in the number of experts testifying in Cook County, Illinois between 1974 and 1989, and finding that experts testified in 86 percent of all cases, 95 percent of personal injury cases and 100 percent of product liability cases in a sample of California cases in 1985 and 1986). The "battle of experts" continues today, and the need for *Daubert* protections is as great, if not more so, as it was twenty years ago. As Justice Breyer has recognized, "there is an increasingly important need for law to reflect sound science." Stephen G. Breyer, *The Interdependence of Science and Law*, 280 Sci. 537 (1998).

Bad science presented as fact by experts can result in removal of beneficial products from the market and has had profound effects on the American economy. *See id.* (recognizing that scientific inaccuracy in the courtroom can force the abandonment of products and "improperly deprive the public of . . . important benefits – those surrounding a drug that cures many while subjecting a few to less serious risks, for example"). For instance, Bendectin, the product that eventually led to the Court's ruling in *Daubert*, was removed

from the market in 1983, leaving no Food and Drug Administration-approved drug for the treatment of morning sickness in early pregnancy. *See* Barbara Culliton, *Merrell Dow Stops Marketing Bendectin*, 221 Sci. 37 (1983). Despite overwhelming scientific evidence finding no link between the drug and birth defects, several juries, adrift in a sea of conflicting "expert" testimony, rendered multimillion dollar awards after hearing expert evidence to the contrary. *See generally* Sanders, *supra;* Richard B. Stewart, *Regulatory Compliance Preclusion of Tort Liability: Limiting the Dual Track System*, 88 Geo. L.J 2167, 2171-72 (2000). The Bendectin situation is not unique. Silicone breast implant litigation forced Dow Corning to file Chapter 11 bankruptcy in 1995, despite the fact that medical evidence found no link between implants and autoimmune disorders, cancer or any other disease. *See* Marcia Angell, *Science on Trial: The Clash of Medical Evidence and the Law in the Breast Implant Case* 90-110 (1996) (authored by the executive editor of the *New England Journal of Medicine*).

Whether or not courts exclude unreliable expert testimony has a real impact on the outcome of such litigation. *See* James T. Rosenbaum, *Lessons from Litigation Over Silicone Breast Implants: A Call for Activism by Scientists*, 276 Sci. 1524 (1997) (discussing actions of some federal judges to exclude expert testimony that was not scientifically sound in the Bendectin and silicone breast implant litigation). Even where there is no potentially broad harm to society, admitting unreliable expert testimony can unjustly harm a defendant where its product or conduct was not the cause of the plaintiff's injury. The instant case is not alone in this crucial respect.

Those seeking to evade *Daubert* may unduly emphasize language in the Court's opinion in which it explained that it provided a "flexible" approach and did not intend to provide

a "definitive checklist or test" for determining whether a theory or technique is reliable. 509 U.S. at 593-94. This qualification, however, stemmed from the possibility that, in some circumstances, testing for one or more of the other factors discussed by the court might not be feasible or applicable in a particular case. *See Kumho Tire*, 526 U.S. at 150. As Members of this Court cautioned at that time, "the discretion it endorses – trial-court discretion in choosing the manner of testing expert reliability – is not discretion to abandon the gatekeeping function." *Id.* at 158-59 (Scalia, J., concurring, joined by O'Connor and Thomas, JJ.). Likewise, the Fifth Circuit has warned, "*Kumho Tire*'s emphasis on the word 'may' should not be misunderstood to grant open season on the admissibility of expert testimony by permitting courts to discretionarily disavow the *Daubert* factors." *Black v. Food Lion Inc.*, 171 F.3d 308, 311 (5th Cir. 1999).

II. THE TENTH CIRCUIT RULING FAILS TO UPHOLD THE PRINCIPLES OF *DAUBERT*

Here, there were two competing causes to explain the explosion in the plaintiffs' basement: (1) a gas leak stemming from a "T-connector" in the copper line that supplied the water heater and a space heater; or (2) a gas leak stemming from a defective safety valve in the propane gas control manufactured by the defendant. (Pet. App. at 35a.) In such a situation, causation is the primary issue in the case.

The plaintiffs' experts on causation, Donald Sommer and Elden Boh, testified that the explosion resulted from an intermittent leak in the gas control. (*See* Pet. App. at 35a.) They supported the plaintiffs' theory that tiny copper sulfide particles passed through or around the mesh screen positioned at the inlet and, combining with grease on the seat of the safety valve, prevented the valve from fully shutting when the pilot light went out. (*See* Pet. App. at 35a.) The experts provided a perfectly reasonable *hypothesis*, an edu-

cated guess – but their testimony did not approach the level of scientific reliability necessary to reach a jury as required by this Court. In essence, their method was guesswork, their testing was nonexistent, and their conclusion flowed from this process.

The United States District Court for the District of Colorado failed to fulfill its obligation to serve as a gatekeeper. In ruling on the defendants' motions for summary judgment, the District Court recognized that Mr. Sommer did not conduct any laboratory tests on the gas control safety valve or inlet screen to validate his theory, but found instead that "defendants place too much emphasis on a mechanical application of the *Daubert* factors." (Pet. App. at 48a.) The court found that *Daubert*'s requirements were relaxed when an expert's theory is not new and novel. (*See* Pet. App. at 49a-50a, 55a.) With respect to Mr. Boh, the district court found that his personal experience and observations rendered his testimony sufficiently reliable, even if he could not explain how the valve malfunctioned or why the T-connector was not responsible for the explosion. (*See* Pet. App. at 43a-45a.) The district court's analysis focused exclusively on the grounds supporting the experts' methodology, finding that any gap between the analysis and conclusion went to the weight of the testimony, not its admissibility. (*See* Pet. App. at 54a.) The case, including the expert testimony, was submitted to a jury, which returned a verdict of approximately $2.3 million.

The Tenth Circuit affirmed in an opinion that, if allowed to stand, would steer district courts away from their gatekeeping obligation. *Bitler v. A.O. Smith Corp.*, 400 F.3d 1227, 1230 (2004). The Tenth Circuit's signal would direct district courts back toward the pre-*Daubert* days of letting both good and bad expert testimony "go to the jury." In addition to not applying its gatekeeper function to two experts'

unfounded conclusions, the Tenth Circuit found that *Daubert*'s requirement that expert testimony "fit" the facts of the case meant no more than that the evidence have the minimal relevancy required by Federal Rule of Evidence 401. *Id.* at 1234. The Tenth Circuit reduced the importance of testing to questions involving "causal relations among regularly occurring natural phenomena" or novel theories. *Id.* at 1235. The Tenth Circuit further found that although "differential diagnosis" is a method ordinarily limited to the medical context, "in this circumstance it is a valid scientific technique to establish causation" – even though it is a highly dissimilar situation. *Id.* at 1236. In sum, the Tenth Circuit found that Mr. Sommer and Mr. Boh were permitted to testify as experts on the ultimate issue in the case based on a highly relaxed *Daubert* review of their methodology and conclusion.

III. OVER TWELVE YEARS OF LITIGATION HAVE PRODUCED DIVISION AMONG THE CIRCUITS ON THREE CRUCIAL ISSUES

Over the past twelve years, key differences have arisen in the interpretation of *Daubert*. Courts have applied this Court's dictates with various levels of rigor. *See* Richard T. Stilwell, *Kuhmo Tire: The Battle of the Experts Continues*, 19 Rev. Litig. 193, 210-23 (2000) (examining differences in the evaluation of expert testimony among several Circuit Courts). This case presents the Court with a unique opportunity to provide guidance on three key areas of division. The combination of these issues, each incorrectly decided below, substantially undermines both the letter and spirit of *Daubert*. First, may a court consider an expert's conclusions or must the court focus solely on the expert's methodology in determining reliability? Second, does *Daubert* require a heightened level of relevance beyond that ordinarily required by Federal Rule of Evidence 401? Third, does a proffered

expert's failure to test a theory, when readily verifiable through testing, render it unreliable and inadmissible?

A. May a Court Consider an Expert's Conclusions or Must the Court Focus Solely on the Expert's Methodology?

As a matter of basic logic in the search for the truth, *Daubert* principles must be applied to both an expert's methodology and conclusions. Experts, unlike lay witnesses, are permitted to reach conclusions on the ultimate issue in the case. For that very reason, it is particularly important to ensure that experts' conclusions flow from their methodology before they are placed before the jury or finder of fact. To paraphrase Justice Cardozo, conclusions in the air, so to speak, will not do. *See Palsgraf v. Long Island R.R.*, 162 N.E. 99, 99 (N.Y. 1928).

This Court recognized this key factor in *General Electric Co. v. Joiner* when it found that "conclusions and methodology are not entirely distinct from one another." 522 U.S. 136, 146 (1997). When experts' conclusions do not follow from the science, data, or other facts supporting their theories, there is "simply too great an analytic gap" to admit the testimony. *Id.*

The Tenth Circuit gave lip service to this Court's clarification in *Joiner*. The Tenth Circuit's analysis focused exclusively on the experts' methodology, disregarding that the experts' conclusions did not, as a matter of good science, flow from their theoretical analysis. The Tenth Circuit found that just because it is well-documented that *large* copper sulfide particles can cause leaks on water heaters *without* a mesh inlet screen, the experts' could conclude that *tiny* particles could surpass the protective screen of the water heater at issue and cause an intermittent gas leak. Even if the experts' methodology is sound – a highly dubious assumption given their lack of testing – their conclusion does not flow from the

evidence. This is the type of "analytic gap" that the Court warned about in *Joiner*.

As Petitioners recognize, several circuit courts, apparently confused by the conflicting language in *Daubert* and *Joiner*, have focused solely on an expert's methodology in determining reliability, while permitting conclusions, which may lack reliability, to slip through the gate. (Pet. Writ Cert. at 12-14.) Others have properly recognized that district court judges should examine an expert's ultimate conclusion "to determine whether they could reliably follow from the facts known to the expert and the methodology used." (*See* Pet. Writ Cert. at 14) (quoting *Heller v. Shaw Indus., Inc.*, 167 F.3d 146, 153 (3d Cir. 1999)); *see also Nelson v. Tenn. Gas Pipeline*, 243 F.3d 244, 254 (6th Cir. 2001) (finding that although there are commonly observed symptoms of PCB exposure documented in scientific literature, the expert's conclusion that PCB exposure caused the kinds of symptoms experienced by the plaintiffs in the case at issue was not reliable); *Moore v. Ashland Chem. Inc.*, 151 F.3d 269, 279 (5th Cir. 1998) (en banc) (noting that "several post-*Daubert* cases have cautioned about leaping from an accepted scientific premise to an unsupported one" and finding no scientific support for the expert's conclusion that exposure to any irritant at unknown levels triggers the asthmatic-type condition experienced by the plaintiff).

The district court's role as gatekeeper is compromised if expert testimony is admitted because the methodology is apparently sound, but the conclusion is detached from the facts of the case, test results, or the expert's analysis. This Court should grant certiorari in this case to clarify that the spirit and purpose of *Daubert* are compromised if courts scrutinize only an expert's methodology and not his or her conclusions.

B. Does *Daubert* Require a Heightened Level of Relevance?

This Court has ruled than an expert's testimony must "fit" the facts of the case if it is to help the trier of fact. *Daubert*, 509 U.S. at 591 (adopting the standard applied by Judge Becker in *United States v. Downing*, 753 F.2d 1224, 1242 (3d Cir. 1985)). The Court explained that Rule 702 "requires a valid scientific connection to the pertinent inquiry as a precondition to admissibility." *Id.* at 592. This is a higher standard than the standard under Federal Rules of Evidence 401 and 402, which governs relevance generally. It recognizes that a district court has a special duty to examine purported expert testimony, testimony that by definition is outside the realm of an ordinary juror's scope of knowledge, to ensure it is based on reliable, scientific principles.

The Federal Rules were set up to tilt toward admissibility of ordinary evidence. Federal Rules of Evidence 401 and 402 allow for broad admissibility of evidence so long as it is "relevant," meaning that it has "any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence." "The Rule's basic standard of relevance thus is a liberal one." *Daubert*, 509 U.S. at 588.

When the admissibility of evidence offered by those presented as experts is at issue, the Federal Rules of Evidence and this Court have recognized that additional safeguards are warranted. In *Daubert*, the Court correctly observed that while Rules 401 and 402 provide the "baseline" for admissibility, when expert testimony is offered, the more precise and rigorous requirements of Rule 702 speak to the issue. *Id.* at 587. In effect, Rule 702's requirement that "scientific, technical, or other specialized knowledge . . . assist the trier of fact to understand the evidence or to determine a fact in issue" trumps the otherwise liberal relevancy requirements of

the Federal Rules. In sum, the "sevens" are different than the "fours." *See id.* at 591 (finding that in cases involving expert testimony, Rule 702 "goes primarily to relevance").

Despite this Court's instructions, in determining the admissibility of expert testimony here, the Tenth Circuit quoted the broad relevancy standard of Rule 401. *Bitler*, 400 F.3d at 1234. It looked only to whether there was "a logical relationship between the evidence proffered and the material issue that the evidence is supposed to support," *id.*, rather than at the presence of the closer "fit" mandated by this Court. Due to its faulty analysis, the district court admitted expert testimony based on products that had a different design from the water heater at issue, and did not require the experts to account for those differences or to validate their theory.

As the Petitioner recognizes, the Second Circuit has also mistakenly looked to Rule 401 to determin the relevancy of expert testimony. (*See* Pet. Writ Cert. at 18.) In addition, it appears that the Fifth Circuit has occasionally gone down this erroneous path. *See Mathis v. Exxon Corp.*, 302 F.3d 448, 460 (5th Cir. 2002) (looking to Rule 401 to define relevancy under Rule 702). Most courts, however, have taken the approach that better protects against unreliable expert testimony, requiring a higher standard – the "fit" discussed in *Daubert*. (See Pet. Writ Cert. at 19-21); *see also Group Health Plan, Inc. v. Philip Morris USA, Inc.*, 344 F.3d 753, 760-61 (8th Cir. 2003) (finding expert testimony regarding causation and damages was properly excluded when an expert's work was thorough, sophisticated, and often well-grounded in the relevant scientific literature, but disconnected from the plaintiff's theory of liability).

This case provides the Court with an opportunity to resolve this issue and reaffirm the higher bar that must be met with respect to relevance applicable to admission of expert testimony.

C. Does a Proffered Expert's Failure to Test a Theory, When Readily Verifiable Through Testing, Render it Unreliable and Inadmissible?

In *Daubert*, the Court instructed that expert testimony must be "ground[ed] in the methods and procedures of science" to satisfy the standard of evidentiary reliability. 509 U.S. at 590. The Court recognized that, first and foremost, what distinguishes theory or technique from admissible expert testimony is whether it can and has been tested. *Id.* at 593.

It may surprise some to learn that an originator of the scientific method was not a scientist, but none other than a lawyer. In 1620, Sir Francis Bacon, a barrister who rose to be Lord Chancellor of England under the rein of James I, published his seminal work, *Novum Organum*. Bacon believed that "investigating and discovering truth" about nature requires a repeating cycle of observation, hypothesis, *experimental tests*, and the need for independent verification. Francis Bacon, *Novum Organum* (1620), *reprinted in The Advancement of Learning and Novum Organum* 316-17, 332 (Justin McCarthy et al. eds., 1900).

The Court recognized these basic principles in *Daubert* and emphasized the importance of testing as a "key" to determining admissibility of expert testimony. 509 U.S. at 593. "Scientific methodology today is based on generating hypotheses *and testing them* to see if they can be falsified; indeed, this methodology is what distinguishes science from other fields of human inquiry." *Id.* (emphasis added) (citing scholarship recognizing the importance of testing in a scientific inquiry). Other courts have recognized the importance of this process in the courtroom. *See, e.g., Moore*, 151 F.3d at 276 ("[T]he party seeking to have the district court admit expert testimony must demonstrate that the expert's findings and conclusions are based on the scientific method, and,

therefore, are reliable. This requires some objective, independent validation of the expert's methodology."); *O'Key*, 899 P.2d at 672 ("The scientific method is a validation technique, consisting of the formulation of hypotheses, followed by observation or experimentation to test the hypotheses.").

It is not the case that testing is only important with respect to scientific evidence, and not technical or other specialized knowledge. In *Kumho Tire*, the Court found that Rule 702 made "no relevant distinction between 'scientific' knowledge and 'technical' or 'other specialized' knowledge" and found that the district court's gatekeeping obligation applied equally to all expert testimony. 526 U.S. at 147. As one commentator has recognized: "Although Rule 702 specifies that an expert may be qualified through experience, the Court's emphasis in *Daubert* on 'testability' suggested that an expert should not be allowed to base a conclusion solely on experience if the conclusion can be easily tested." Margaret A. Berger, *The Supreme Court's Trilogy on the Admissibility of Expert Testimony, in Reference Manual on Scientific Evidence* 9, 15 (Fed. Jud. Ctr. ed., 2d ed. 2000)

An expert's hypothesis, without testing, is rendered unsupported speculation. As a well-respected scientific research text states:

> The most important feature of an hypothesis is that it is a mere trial idea, a tentative suggestion concerning the nature of things. Until it has been *tested*, it should not be confused with a *law*. Unfortunately, in many fields, especially on the border lines of science, hypotheses are often accepted without adequate tests. Plausibility is not a substitute for evidence, however great may be the emotional wish to believe.

E. Bright Wilson, Jr., *An Introduction to Scientific Research* 26 (1952) (emphasis in original). In effect, the expert has thrown his or her hands in the air and exclaimed, "Gotcha!" after developing a reasonable theory to explain an event, but before verifying it. This is a common mistake that diligent federal judges can protect against through exercising their gatekeeping function.[2] As gatekeepers, judges have an obligation to keep theories out of the courtroom unless and until the expert's hypothesis is tested. Reliable expert testimony should not require a leap of faith.

Indeed, testing is particularly important in cases such as this one. Here, there are two competing possible causes. While not every guidepost outlined in *Daubert* will necessarily apply to expert testimony based on engineering principles and practical experience, here, the expert's theory could have been verified by an objective test – cheaply, easily and efficiently.

The situation in this case is analogous to the process of determining why a light bulb will not turn on. There are at least two likely potential causes. The bulb could be burned out. Alternatively, the bulb could be loose in the socket. Here, the "experts" declared to a jury that the light bulb was burned out without first shaking the bulb or attempting to tighten it. In such a situation, testing should be required and this Court should say so.

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[2] As college students are instructed in introductory level courses, "[t]he most fundamental error is to mistake the hypothesis for an explanation of a phenomenon, without performing experimental tests. Sometimes 'common sense' and 'logic' tempt us into believing that no test is needed. There are numerous examples of this, dating from the Greek philosophers to the present day." Frank L. H. Wolfs, Univ. of Rochester, Prof. of Physics, *Laboratory Experiments, Appendix E: Introduction to the Scientific Method, at* http://teacher.nsrl.rochester.edu/phy_labs/AppedixE/AppendixE.html.

As the authors of the treatise *Modern Scientific Evidence: The Law and Science of Expert Testimony* (1997 & Supp. 1999) have observed:

> Many courts are willing to reject testimony when it is clear that the expert could create better evidence. . . . Simply put, courts are beginning to wonder, if these theories and opinions are testable, why haven't they been tested?

Faigman, *supra*, at 666. Several courts have placed a heavy emphasis on testability, as discussed in the Petitioner's brief. (Pet. Writ Cert. at 24.) In fact, in a case similar to the one before the Court, the Eighth Circuit found a district court committed prejudicial error in failing to exclude the testimony of a master electrician where he "did no testing to bolster this . . . theory of fire cause and origin." *Weisgram v. Marley Co.*, 169 F.3d 514, 519-20 (8th Cir. 1999). The court found that the absence of such testing rendered his testimony "rank speculation" and "nothing more than pure conjecture" as to whether the manufacturer's baseboard heater was defective and caused a fire. *Id.*

Unfortunately, the Tenth Circuit did not apply the scientific principles embodied in *Daubert*. It did not require the experts in this case to produce "better evidence" through testing when readily available, and instead surpassed its discretion in applying the *Daubert* factors to abandon its gatekeeping function.

IV. THE COURT SHOULD TAKE THIS CASE TO PROVIDE GUIDANCE TO LOWER COURTS AND PRESERVE THE LETTER, PURPOSE AND SPIRIT OF *DAUBERT*

As Brooklyn Law School Professor Margaret A. Berger predicted shortly after *Kumho Tire*, "Numerous issues re-

main unresolved, and the possibility exists that splits in the circuits will result, particularly in connection with the proof of causation in toxic tort cases, the question that engaged the Court's interest in expert testimony in the first place." Berger, *supra*, at 38.

The Court should grant certiorari in this case to preserve both the letter and spirit of *Daubert*. This case presents the Court with a unique opportunity to provide guidance on three key areas of division. On each issue, the Tenth Circuit strayed from *Daubert*'s meaning and purpose. The improper interpretation of all three, as occurred in the instant case, can and did render the *Daubert* standard meaningless. It sends the wrong signal at the wrong time to district court judges in the Tenth Circuit and the rest of the country.

CONCLUSION

For the foregoing reasons, *amici curiae* the American Tort Reform Association and National Association of Manufacturers respectfully request that this Court grant the Petition for a Writ of Certiorari in this action.

Respectfully submitted,

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Dated: June 9, 2005

Supreme Court, U.S.
FILED
JUN 2 1 2005
OFFICE OF THE CLERK

(4)

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REPLY BRIEF FOR PETITIONER

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REPLY BRIEF FOR PETITIONER

Plaintiffs' brief in opposition is almost entirely nonresponsive. Plaintiffs fail to rebut—indeed, they virtually ignore—the arguments in the petition demonstrating why this Court's guidance is needed to resolve the conflicts in the lower courts over the proper application of *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993). Instead, plaintiffs devote substantial portions of their brief to a lengthy description of the purported qualifications of their experts, Opp. 5-13, and to their claim that they will prevail on the merits. Opp. 16-21.

Of course, a respondent's claim that it will win on the merits is not a basis for denying review, and the fact that plaintiffs spend less than one page—*see* Opp. 15—attempting to rebut the existence of the circuit splits discussed in the petition reflects their implicit acknowledgment that White-Rodgers has satisfied the standard for obtaining certiorari. Indeed, plaintiffs do not seriously contest White-Rodgers's showing that the lower courts have taken sharply differing approaches to *Daubert*'s gatekeeping requirements. Nor do plaintiffs address a single one of the court of appeals cases discussed in the petition, or for that matter even mention *General Electric Co. v. Joiner*, 522 U.S. 136 (1997)—a case discussed at length by White-Rodgers.

Simply put, plaintiffs offer no reason for this Court to deny review of a case that exacerbates several splits in the lower courts over *Daubert* and its progeny. Plenary review is warranted to resolve the conflict over whether *Daubert* permits courts to consider experts' conclusions as well as their methodologies; to dispel the confusion over whether *Daubert*'s "fit" requirement demands a heightened level of relevance, or whether it can be satisfied by a mere showing of relevance under Federal Rule of Evidence 401; and to clarify whether a district court abuses its discretion by allowing an expert to present his untested theory of causation to the

jury, where the theory meets *none* of the *Daubert* reliability factors and could have been readily verified through testing.

These questions are important and recurring. As the American Tort Reform Association and the National Association of Manufacturers explain in their *amicus* brief, "[e]xpert witnesses are given extraordinary privileges in court" and as a result, "[b]ad science presented as fact by experts can result in removal of beneficial products from the market and [have] profound effects on the American economy." ATRA Br. at 4, 6. This Court should grant review, resolve the conflicts plaguing the lower courts, and make clear that *Daubert*'s gatekeeping requirement must be enforced strictly and with rigor.

I. This Case Squarely Presents Three Issues Of Law, And Plaintiffs' Factual Recitation Is Irrelevant.

The bulk of plaintiffs' brief consists of a lengthy factual recitation, followed by insistent assertions that the Tenth Circuit and plaintiffs are correct on the merits. The apparent purpose of plaintiffs' approach is to convince this Court that the decision below is "fact-bound," Opp. 1, and dependent on resolution of contested factual issues rather than questions of law.

Plaintiffs are wrong. The Tenth Circuit committed several fundamental *legal* errors in its application of *Daubert*'s gatekeeping requirement. For example, it held that in determining an expert's reliability, "a trial court's focus generally should not be upon the precise conclusions reached by the expert, but on the methodology employed in reaching those conclusions." Pet. App. 9a. It also held, in applying *Daubert*'s requirement that there be a "fit" between the expert's opinion and the facts of the particular case, that "[a] trial court must look at the logical relationship between the evidence proffered and the material issue that evidence is supposed to support to determine if it advances the purpose of aiding the trier of fact"—thus indicating that it was applying a Rule 401 relevance standard. *Id.* at 10a; *see also id.* at

19a (rejecting White-Rodgers's "fit" challenge on the basis that the testimony of plaintiffs' experts "involves a reliable method that would aid the jury in resolving a factual dispute").

The questions presented by White-Rodgers's petition focus on the legal standards for the admission of expert testimony applied by the district court and Tenth Circuit. Thus, plaintiffs' extended discussion "set[ting] forth each of their experts, their skills, training and experience, and the substance of their testimony," Opp. 5, is irrelevant to the issues before this Court at the certiorari stage.

Moreover, although plaintiffs contend that White-Rodgers "generally mischaracterizes the expert testimony presented at trial," Opp. 1, the entire "expert testimony" section of plaintiffs' brief is devoid of a single citation to the record. *See* Opp. 5-13. Apparently viewing themselves as unencumbered by any need to support their statements with evidence, plaintiffs make factual assertions that have absolutely *no* support in the record, such as their claim that a particle that is 85 micrometers in size could keep the valve from shutting.[1]

In short, *regardless* of plaintiffs' depiction of the facts and the purported qualifications of their experts, the ques-

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[1] Plaintiffs' experts never performed any tests that would have determined the size of a particle capable of keeping the valve open. Although Bullerdiek opined that a particle the size of a human hair could be sufficient, there is no evidence in the record about the size of a human hair, and Bullerdiek's opinion is utterly speculative and rests entirely on his *ipse dixit* assertion. Plaintiffs' brief is riddled with inaccuracies and misleading statements, such as their claim that this case was "decided . . . by more than a dozen federal judges," Opp. 1, and their assertion that "the problems of copper sulphide contamination persisted" after the introduction of a screen mechanism in 1978, Opp. 2, when in fact there is no evidence of leaks caused by copper sulfide particles in *screened* gas controls. Nor is there any merit to plaintiffs' claim that White-Rodgers somehow endorsed plaintiffs' theory of defect by "offer[ing] at trial to stipulate that sulfide particulate contamination has caused intermittent valve leaks." Opp. 4. The offered stipulation only concerned *unscreened* gas controls.

tions presented by White-Rodgers's petition focus on whether this Court's review is warranted to resolve the conflicts over the legal standards governing the admissibility of expert testimony. As shown below, on that critical question, plaintiffs offer virtually no rebuttal.

II. Three Substantial And Recurring *Daubert* Questions Warrant This Court's Review.

A. This Court Should Resolve The Conflict Over Whether *Daubert* Permits Consideration Of An Expert's Conclusion.

The Tenth Circuit refused to consider whether plaintiffs' experts' *conclusions*—as distinct from their *methodologies*—were reliable. Pet. 12-15. In focusing on the experts' general testimony that "copper sulfide particles are the kind of thing that when lodged on the valve seat can cause leaks," Pet. App. 14a, the court of appeals ignored the complete lack of support for the experts' conclusion that the *minuscule* particles present *in this case*, when combined with grease, could have held open the safety valve. By doing so, the Tenth Circuit followed the approaches employed in the Second and Eighth Circuits, in which district courts are instructed *not* to evaluate the reliability of an expert's ultimate conclusion, as long as his general methodology appears reliable. *See, e.g.*, *Campbell v. Metro. Prop. & Cas. Ins. Co.*, 239 F.3d 179, 186 (2d Cir. 2001); *Smith v. BMW North America, Inc.*, 308 F.3d 913, 919 n.9 (8th Cir. 2002).

The "methodology-only" approach is based on a sentence from *Daubert* in which this Court remarked that the "focus" of a district court's reliability inquiry "must be solely on principles and methodology, not on the conclusions that they generate." 509 U.S. at 595. Although this Court appeared to modify its approach in *Joiner*, 522 U.S. at 146, where it cautioned courts against admitting testimony where there is "too great an analytical gap between the data and the opinion proffered," many courts, such as the Tenth Circuit, continue to rely on the *Daubert* language, while others construe *Joiner* as having modified *Daubert*. *See, e.g.*, *Heller v.*

Shaw Industries, Inc., 167 F.3d 146, 153 (3d Cir. 1999) (district courts must "examine the expert's conclusions in order to determine whether they could reliably follow from the facts known to the expert and the methodology used"); *Ruiz-Troche v. Pepsi-Cola of Puerto Rico Bottling Co.*, 161 F.3d 77, 81 (1st Cir. 1998) (after *Joiner*, "trial judges may evaluate the data offered to support an expert's bottom-line opinions to determine if that data provides adequate support to mark the expert's testimony as reliable"). Only this Court can resolve this conflict and the apparent tension between *Daubert* and *Joiner*.

Although White-Rodgers discussed this issue at length in its petition, and cited scholarly commentary analyzing the "significant split among the circuits on this question," Pet. 12-15, plaintiffs have little to say in response. They simply *assert* that "[t]here is no split among the circuits on the issues raised in the Petition." Opp. 15. They do not even cite, let alone discuss, the many cases examined in White-Rodgers's petition.

Plaintiffs contend that a circuit split could arise only if another circuit court were "to hold that exact or very similar proffered testimony was inadmissible." Opp. 15. But this Court has routinely granted certiorari in cases where the lower courts have diverged in their application of federal law, regardless of whether the cases involved identical facts. In fact, in *Daubert* itself, this Court "granted certiorari in light of sharp divisions among the courts regarding the proper standard for the admission of expert testimony." 509 U.S. at 585 (citation omitted). Certiorari is warranted here for the same reason.

Ironically, plaintiffs cite a law review note, *Reliable Evaluation of Expert Testimony*, 116 HARV. L. REV. 2142 (2003), to support their contention that there is little confusion in the courts over *Daubert* questions. Opp. 15. But that commentator actually concludes that *Daubert* and its progeny have "yielded inconsistent approaches" and the "[i]nconsistency in the substantive standards for assessing

expert testimony is troublesome [because] it means that similarly situated litigants are treated differently based on where they litigate, and it promotes forum shopping." 116 HARV. L. REV. at 2146-47.

Absent guidance from this Court, the circuits will continue to apply "inconsistent approaches" to *Daubert*'s gatekeeping requirement and the question whether a district court may consider experts' conclusions as well as their methodologies in assessing reliability.

B. This Court Should Clarify Whether *Daubert*'s "Fit" Requirement Imposes A Heightened Standard Of Relevance.

Plaintiffs contend that "there is no significant issue of federal law at stake in this case," because there is no compelling reason "for altering" Federal Rules of Evidence 401 and 702. Opp. 14-15. This *non sequitur* is not a reason for denying certiorari.

White-Rodgers, obviously, is not arguing that Rule 401 or Rule 702 should be "altered." Rather, White-Rodgers's argument is that the Tenth Circuit's approach to *Daubert*'s "fit" requirement—essentially treating it as akin to Rule 401's relevancy standard—is inconsistent with *Daubert*, *Joiner*, and *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999). Moreover, the Tenth Circuit's approach conflicts with the approaches followed by other courts of appeals, such as the Third Circuit and the Eleventh Circuit. *See In re Paoli Railroad Yard PCB Litig.*, 35 F.3d 717, 745 n.13 (3d Cir. 1994) ("the standard for fit is higher than bare relevance"); *Allison v. McGhan Med. Corp.*, 184 F.3d 1300, 1310 (11th Cir. 1999) (contrasting Rule 401's "liberal admission of evidence standard" with *Daubert*'s "more stringent standards of reliability and relevance").

Plaintiffs make no attempt to reconcile the Tenth Circuit's application of a relaxed relevance standard with the far more rigorous standard applied in other circuits. *See* Pet. 15-21. Instead, plaintiffs simply rely on their utterly unsupported and patently incorrect assertion that "[t]here is no split

among the circuits on the issues raised in the Petition." Opp. 15.

A heightened relevance standard gives meaning to this Court's description of "fit" in *Daubert*, and prevents expert witnesses from offering potentially misleading testimony that does not have the requisite connection to the underlying data or facts. In this case, plaintiffs' experts failed to explain how the tiny copper sulfide particles that were found downstream from the mesh screen could have prevented the safety valve from closing properly.[2] Had the district court applied the heightened relevance standard contemplated by *Daubert*, plaintiffs' experts would not have been allowed to present their bogus theories to the jury. This Court should grant review and reject the Tenth Circuit's approach.

C. Review Is Warranted To Clarify When Testing Is Necessary To Establish Reliability.

Plaintiffs claim that their experts should not have been required to test their causation theory before presenting it to the jury. Opp. 18. Notably, plaintiffs do *not* contend that such testing would have been difficult, or time-consuming, or otherwise burdensome or impractical. Nor do they dispute that such testing would have quickly and easily confirmed the reliability of their experts' theory—that minuscule copper sulfide particles, combined with grease, prevented the safety valve from closing in this case.

Instead, plaintiffs assert, again without citation to the record, that there is "general acceptance in the scientific com-

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[2] Plaintiffs contend that White-Rodgers has previously argued in favor of the same theory that plaintiffs' experts advanced in this case. Opp. 16. That is not true. First, White-Rodgers has never claimed that minuscule specks of copper sulfide of the kind at issue in this case could prevent a safety valve from shutting properly. Second, the statements that plaintiffs attribute to White-Rodgers on page 16 of their opposition brief are from cases involving pre-1978 safety valves, *i.e.*, valves that did *not* contain screens like the one in the Bitlers' gas control that prevent larger copper sulfide particles from passing through.

munity" for the proposition that "small particles can combine with grease on the safety valve seat of a propane gas control and cause a leak and subsequent explosion." Opp. 18. But plaintiffs' experts can point to nothing—other than their own self-serving statements—to show that any reputable scientist agrees with them. In the absence of either testing or general acceptance, their theory is a classic example of "opinion evidence which is connected to existing data only by the *ipse dixit* of the expert." *Joiner*, 522 U.S. at 146. Indeed, it is for this very reason that the district court and the Tenth Circuit should have required plaintiffs' experts to test their theory.

Plaintiffs contend that because courts have flexibility under *Daubert* and *Kumho Tire* to determine how best to assess reliability, district courts enjoy *absolute* discretion in deciding which, if any, factors to apply in a given case. Opp. 17-20. Plaintiffs quote this Court's observation in *Kumho Tire* that the *Daubert* factors "may or may not be pertinent in assessing reliability, depending on the nature of the issue, the expert's particular expertise, and the subject of the testimony." Opp. 20 (quotation omitted). Of course, that language from *Kumho Tire* does not resolve whether a failure to require testing amounts to an abuse of discretion in a product liability case like this one, where an expert offers a theory of causation that is not otherwise reliable or well-established in the scientific community, and that could easily be verified through testing.

This case provides the opportunity to give force to the recognition that although "the *Daubert* factors are not holy writ, in a particular case the failure to apply one or another of them may be unreasonable, and hence an abuse of discretion." *Kumho Tire*, 526 U.S. at 159 (Scalia, J., concurring, joined by O'Connor & Thomas, JJ.). Indeed, "the discretion [*Daubert*] endorses—trial-court discretion in choosing the manner of testing expert reliability—is not discretion to abandon the gatekeeping function," *id.* at 158-59, yet the approach followed by the courts in this case amounts to a virtual abandonment of that responsibility. *See* ATRA Br. at

15-18 (discussing cases and scientific treatises emphasizing the importance of testing as an indicator of reliability).

As the *Kumho Tire* majority explained, district courts "should consider the specific factors identified in *Daubert* where they are reasonable measures of the reliability of expert testimony." *Id.* at 152. The contrast between the Tenth Circuit's approach in this case—rejecting testing as a measure of reliability—and the emphasis that many other courts have placed on testing, *see* Pet. 24, highlights the need for this Court to make clear that while a district court's discretion under *Daubert* may be considerable, it is not absolute.

CONCLUSION

For all the reasons set forth above and in the petition, the petition for a writ of certiorari should be granted.

Respectfully submitted.

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June 20, 2005